



NATIONAL ACCIDENT SAMPLING SYSTEM

Data Collection, Coding and Editing Manual
1979 Continuous Sampling System
Version Number 2



**U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
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FOREWORD

The National Accident Sampling System (NASS) Data Collection, Coding and Editing Manual for 1979 represents the final coding protocol for all data elements collected by NASS accident investigators in the 1979 calendar year. This version of the manual has been revised to reflect those data elements which appear in the 1979 Analysis File. It is most useful when questions of interpretation arise for specific coded values. In such cases, the analyst should assume that the value in question was coded by the investigator consistent with its definition in the NASS Data Collection, Coding and Editing Manual. The NASS data flow includes a rigorous quality control procedure which ensures that each coded value does indeed conform to the coding protocol.

The 1979 Analytical User's Manual for NASS, separately available, should be referred to by the analyst for questions concerning the location of data elements in the analysis file, the hierarchical structure of the record types and the NASS sampling plan.

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NASS DATA COLLECTION, CODING AND
EDITING MANUAL

1.0 INTRODUCTION

1.1 Purpose of the Manual

In order to produce a national traffic accident data base for the evaluation of old and the development of new highway and vehicle safety standards and to identify highway safety needs, a National Accident Sampling System is being developed. Part of the final system will consist of 30-60 small teams of accident investigators situated throughout the 48 contiguous states. At each site (Primary Sampling Unit - PSU), the accident research team will investigate a probability sample of primarily towaway accidents on a continuous basis (Continuous Sampling System-CSS). In addition, provision has been made for short term special studies, ancillary studies and the study of minor and non-police reported accidents.

Zone Centers have been established to provide for the quality control of the CSS and special study data collected. Quality control is carried out through Zone Center site visits to the PSU's and through the review of accident case report materials received at the Zone Center. The Zone Centers provide quality control in the areas of sampling, completeness of data, reliability and validity of data. In addition, the Zone Centers provide data collection forms and coding manuals, annual team evaluations, training, extra PSU staff (when needed) and act as a communication link between

the PSU teams and the NASS sampling and data processing contractors.

The purpose of this manual is to provide PSU team members, Zone Centers, the data processing contractor, sampling contractor, training contractors and the National Center for Statistics and Analysis with a consistent, standardized set of instructions for sampling accidents and collecting, coding and editing the data.

1.2 Overview

The manual includes seven substantive sections; each is summarized below.

2.0 Description of the Sampling Frame--This section describes the information source and method for developing the list of all motor vehicle traffic accidents within the study area which qualify for investigation. Corrections, alterations, or improvements to this list are required in order that the sampling procedures be applied properly. These emendations to the available list are described in this section also. For example, one improvement to the list is to classify each accident into one of fourteen sampling strata.

3.0 Sampling Procedures--Included here are the procedures for selecting from the sampling frame list, accidents for investigation. In addition, procedures for filling out and submitting Daily Logs to the Zone Centers are explained.

4.0 Overview of Information to be Collected on Sampled

Accidents--This section describes the forms which are to be filled out on each accident, the different records, e.g., injury records, photographs and other information, e.g., crash runs, which make up a completed case report. Also discussed are the mandatory data items and forms which must be filled out before a case can qualify for submission.

5.0 Submission Instructions--This section describes when and where to submit case reports. It also describes the Quality Control procedures to be used at the PSU sites.

6.0 Coding Instructions--This section provides the general instructions for collecting and coding the data called for in the field forms, update forms and Field Logs. Documentation for each data element includes variable name, element values (attributes), definitions where needed, data sources, collection methodology, reference materials (if needed), remarks, consistency checks, and special processing information.

7.0 Edit Reports--This section of the manual describes the format of the reports which summarize the results of computer consistency checks, manual checks at the Zone Center, and reports from Zone Center visits to the PSU's.

Appendices--The appendices contain some of the necessary references including the Uniform Symbols for Scene Marking, the Photography Instructions, Passenger Car Specifications 1966-1979, the MVMA make/model code dictionary, and the Table of Equidistant Points for "C" Measurements.

Other references to be used in NASS not contained in this manual include: The Third Edition of ANSI D16.1-1976, the

CRASH User's Manual, SAE J224A, the AIS Dictionary, NATB books, (see section 6.3, variable V31), Passenger Car and Truck- Investigators Manual (see section 6.3, variable V31), the Branham Automobile Reference Book (see section 6.3, variable V43) and the Branham Motorcycle and Snowmobile Booklet (see section 6.3, variable V43).

1.3 How to Use This Manual

This manual is designed to be updated periodically without the need for replacing the entire document. This will be accomplished via a system for adding, deleting and changing pages. Additions will be inserted in their proper location and will be identified by a month and year. Pages which are changed will have the same month and year identifier. Periodically a NASS Data Collection, Coding, and Editing Manual Update Directory will be printed and sent to each PSU team and Zone Center. This manual will indicate the date of the latest version of each page. It is important that all manuals be kept up to date and that the update director is displayed in a place that provides easy access.

Suggestions for changes to the manual should be logged at the Indiana Zone Center via the communication network and will be incorporated into the manual on an annual basis. Document all suggested changes or problems by beginning the message with "Coding Manual Change."

2.0 DESCRIPTION OF THE SAMPLING FRAME

2.1 Accidents Which Qualify for Study

The procedures for properly developing the list of motor vehicle accidents within the study area which qualify for investigation are described below.

Start with a Police Reported Incident--All incidents which meet the criteria of a motor vehicle traffic accident, as defined in ANSI D16.1 section 2.3.20, p. 10 - 1976, and result in a police report filled out by an investigating officer are to be considered for study. If a police report has not been filled out by an investigating officer, then it will not qualify for inclusion.

Must Involve A Harmful Event--If the incident does not involve property damage and/or personal injury, do not include it in the list. Also exclude officially ruled suicides, homicides, and pre-crash deaths such as heart attacks. If the official ruling occurs after the case has been selected and part of the investigation has been completed and the incident involves only a single motor vehicle in transport, drop the case. Also exclude catastrophic events such as bridge collapses, tornados, and floods (follow ANSI D16.1 section 2.3.5, p. 8 - 1976).

Example: A prisoner jumps out of police car and is injured. An officer in another car who observes this writes a report. Is this an accident? No. Reference ANSI, section 2.3.4, p. 8 exclusions: deliberate intent. Since the person exited the car intentionally, the event was under human control and does not constitute an accident.

Must Involve A Motor Vehicle as Defined by ANSI--If the police report which has been sampled does not involve at least one motor vehicle as defined by ANSI D16.1, section

2.2.7, p. 5, then it should be returned to the file and not included in the list which qualifies for inclusion.

Example: A bicycle which runs off the road and hits a tree is not a motor vehicle accident and should not be included.

Must Involve A Motor Vehicle in Transport--Use the ANSI D16.1, section 2.2.20, p. 7, definition to determine if the motor vehicles in the accident are in transport. There must be at least one motor vehicle in the accident in transport for the accident to qualify. Note that any driverless vehicle of which any portion is located on the roadway is considered as a vehicle in transport.

Example: A bicyclist running into a car which is parked off the roadway does not constitute a motor vehicle accident for this study and would be excluded. If a police report has been filled out on such an incident, return the police report to the file because it does not qualify.

Must Involve A Motor Vehicle in Transport on A Trafficway--Exclude accidents which occur in places other than a trafficway. Examples of places which are not on the trafficway include parking lots (except entrances and roadways within parking lots which are customarily used to get from the entrance to a parking aisle) and private driveways. Please find diagrams depicting rural, urban and divided trafficways in Figures 2-1, 2-2 and 2-3.

Figure 2-1 Example of a Rural Trafficway

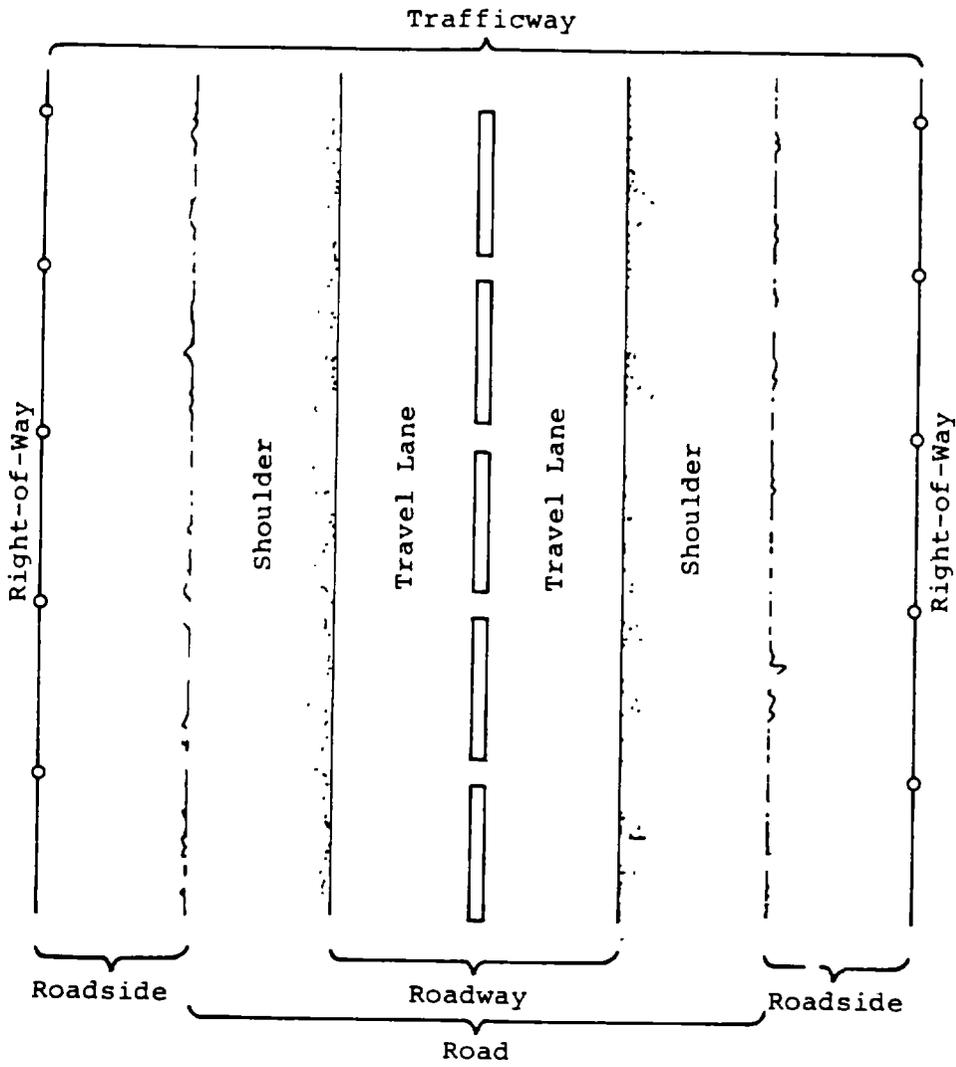
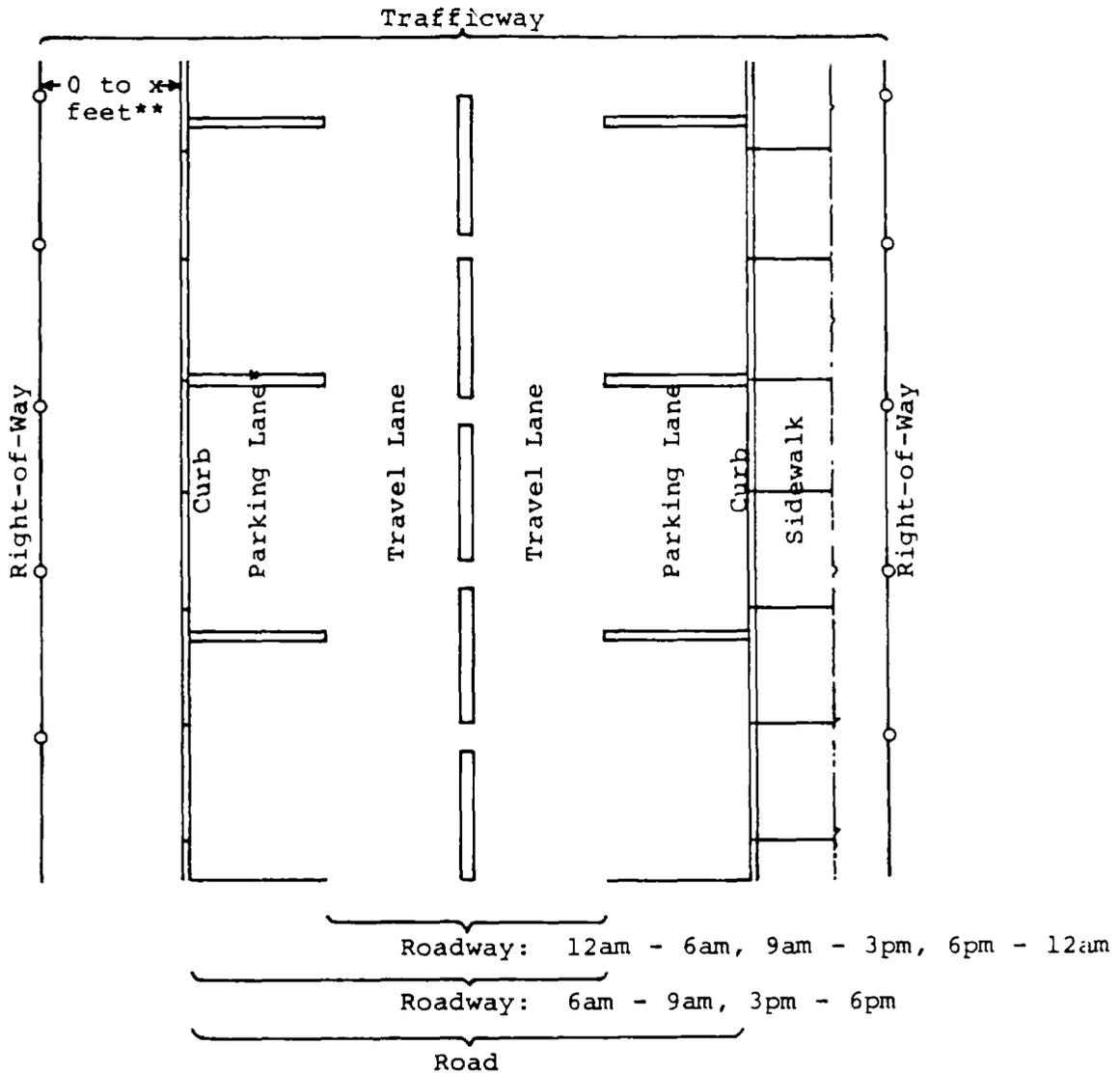


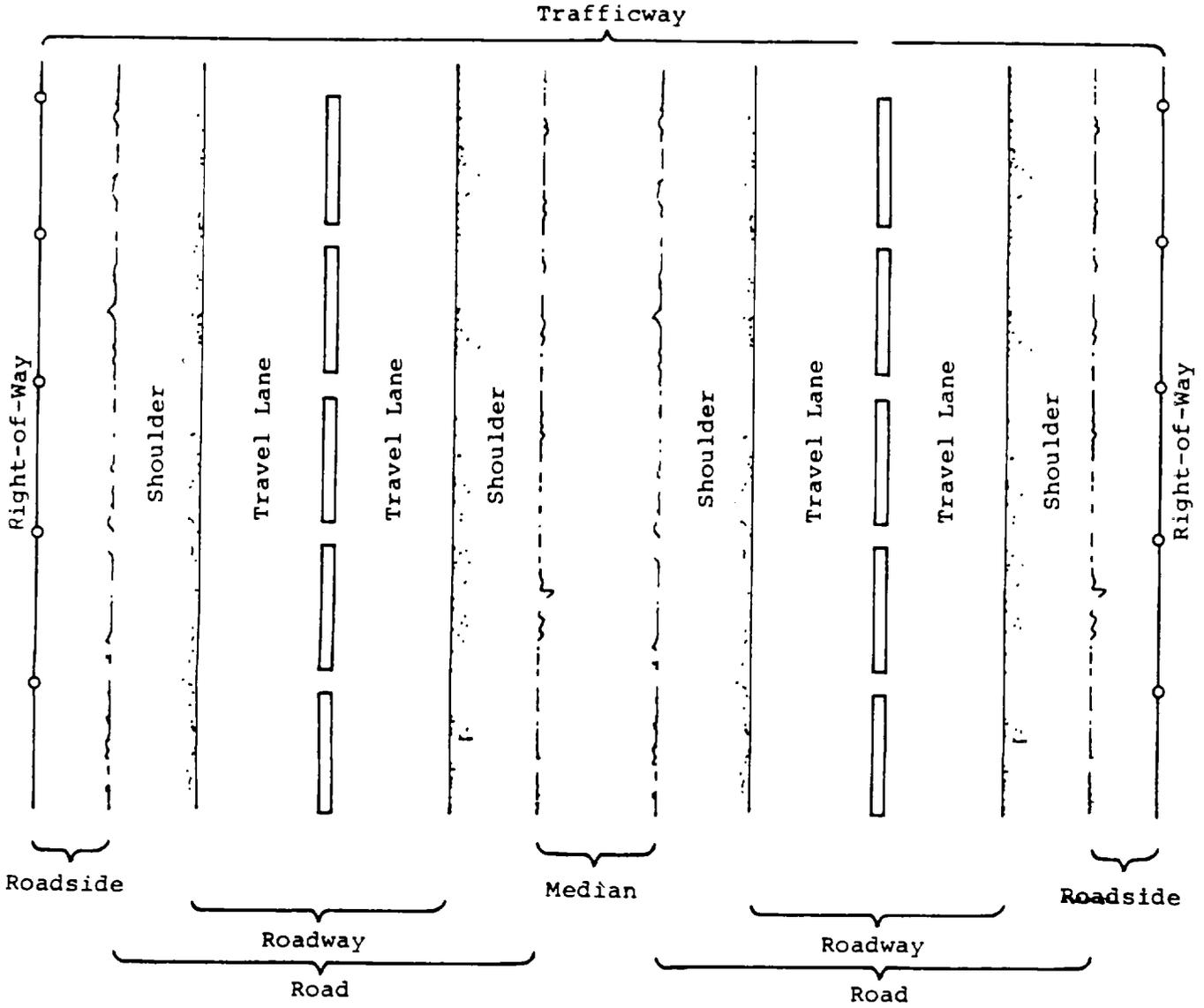
Figure 2-2 Example of An Urban Trafficway



* No parking allowed 6 to 9 a.m. or 3 to 6 p.m.

** The actual right-of-way in many cases will not be known. But it is clear that the trafficway always goes from curb to curb or from shoulder to shoulder.

Figure 2-3 Example of a Divided Trafficway



Example: An abandoned vehicle, a portion of which is on the roadway is struck by a bicyclist causing injury to the bicyclist; a police report is filled out by an investigating officer. Is this a motor vehicle accident? Yes it is. This is because there is a police reported incidence involving a motor vehicle in transport on a trafficway.

Stabilization--At times, one police report will contain more than one accident. This will happen when events constituting an accident have stabilized (use ANSI 16.1, section 2.3.4, p. 8 - 1976) and units involved in the first sequence are subsequently involved in another accident sequence which is recorded on the same police report. When more than one accident is recorded on a police report based on the ANSI definition of stabilized, choose the sequence with the highest injury severity. If the severity of the two accidents is the same, choose the accident which occurred first.

Some Common Questions and Answers About Incidents Which Qualify for Study--Please find below a list of some common questions which arise when determining if an accident report qualifies for the NASS, CSS sampling frame.

Question: Now that the snow is gone, the potholes remain.

If a motor vehicle in transport hits a pothole causing damage to a tire and wheel or to the exhaust system, is this an eligible case.

Answer: Yes they are eligible cases. To be eligible

recall that first a police report must be filed and second that the criteria set forth in ANSI D16.1-1976, section 2.3, pages 8 to 10, have been met. In essence, these criteria mandate that the following occurs: (a) a harmful event (damage or injury), (b) involving a motor vehicle, (c) in transport, and (d) that the unstabilized situation originated (i.e., control was lost) on a trafficway or the harmful event occurred on a trafficway. If the parties involved suffered damage to the wheels, suspension, exhaust system, or undercarriage of their vehicles then you have a valid case; however, ANSI D16.1 specifically excludes damage from mechanical failures during normal operation (section 2.3.2, p. 8). The intent is to exclude a "blow-out" accident where the driver brings the vehicle safely to the side of the road without incurring other damage. This exclusion was not meant to exclude an accident where a "blow-out" led to other vehicle damage (e.g., ran into a tree) while the driver was attempting to regain control.

Question: A man driving a motor home slams on his brakes to avoid another vehicle in his lane. He succeeds; the other vehicle leaves. However, his young daughter is thrown against the seat back and suffers possible injuries. Is this a motor vehicle accident?

Answer: It is a motor vehicle traffic accident involving one vehicle. The other vehicle is not involved.

Question: A car loses control on a trafficway, leaves the

trafficway and does damage to a private lawn. There is no damage to the car and the driver is not hurt. Is this a traffic accident?

Answer: Yes. It would also be a traffic accident if the motor vehicle left the scene before the police arrived (i.e., a hit-and-run vehicle). In these cases the determining factor is whether or not the private citizen called the police and if the police filed an accident report.

Question: A pulp wood truck is traveling down a public road with an insecure load; the load shifts and all of the wood falls off the truck. The wood bounces and rolls and then strikes a fence on the side of the road doing approximately \$500 worth of damage to the fence. There is no damage to anything except the fence and no other vehicles are involved; however, there is a police report made out on the accident. Does this accident qualify for NASS?

Answer: Yes. This situation does qualify for NASS. The harmful event is the damage to the fence.

Question: A powerline falls onto a motor vehicle in transport causing personal injury; is this an applicable case? A tree falls onto a motor vehicle as it was driving down the road; is this an applicable case?

Answer: Both of the above situations plus many similar ones (e.g., rocks fell onto vehicle) fall into the category

of near cataclysmic events. ANSI D16.1 excludes from the definition of an accident (2.3.6, p. 9) harmful events resulting from a cataclysm. To further define this exclusion, the cataclysm must have been going on at the time the accident happened. Cataclysms are defined in ANSI D16.1 in section 2.3.5, p. 8. Therefore, to exclude the situation of an object (powerline, rock, etc.) falling on a motor vehicle in transport, the cataclysm which caused the object to fall must have been on-going at the time of the accident. In terms of the specific questions, they are NASS accidents.

Question: We have a rare case where a bystander dropped his gun, striking the ground, the gun fired and struck the windshield of a vehicle in transport. An accident report was filed. The question is should this accident be listed as a motor vehicle accident?

Answer: No. This is a firearms accident. However, it is entirely possible that a firearms accident could trigger a traffic accident.

Question: A motor vehicle parked in a driveway slipped out of gear and rolled down the drive, through the street, and struck a tree on the other side. Is this an applicable accident?

Answer: It depends on the location of the vehicle when control was lost and the location when the harm occurred. To be an applicable accident, the control must

have been lost on a trafficway or the harmful event must have occurred on a trafficway. If the vehicle was up in its driveway (outside of the trafficway--clearly it must be beyond the curb or any sidewalk boarding the curb), then control was lost (control is assumed lost when the gears slipped) off a trafficway. If the tree that was struck was off the trafficway (same as above), then it is not an applicable accident and whether the vehicle is on or off the roadway at impact is irrelevant. Given that you have to make a decision at the police station (have to have a police report to start with), scrutinize the police report for any information which would help you in determining the locations of the key elements. If the police report is uninformative concerning these key elements include the accident for sampling purposes. If selected, a review of the scene should determine whether or not the case remains.

2.2 Classifying the Accident by Type, Severity and Tow Status

Before an accident is selected for study it must be classified by type injury severity, and tow status. The groups of accidents which are classified by type, severity and tow status are called strata and are the basis for the stratified sampling procedures (stratification with variable sampling fraction) described in section 3.0.

Accident Type Classification--Accidents will be classified into four categories: pedestrians & nonmotorist, motor-

cycle, truck, or other motor vehicle. For the purpose of this study, pedestrians, pedacyclists, occupants of non-motor vehicles, and occupants of motor vehicles not in transport or not in transport on a trafficway, are considered as pedestrian & nonmotorists. To classify the accident by type, first classify each unit in the accident as a pedestrian & nonmotorist, motorcycle, truck, or other motor vehicle. Motor vehicle types which fall into each of these classifications are as follows:

Pedestrian or Nonmotorist - pedestrian; bicyclist; other cyclist; animal related; other nonmotorist.

Motorcycle - motorcycle; mo-ped; other (e.g., mini-bikes, motor scooters, sidecar cycle).

Truck - pickup; van (passenger, cargo, vanbased station wagon); truck based station wagon (e.g., I.H. Travelall, etc.); single unit truck (10,000 lbs. < G.V.W. < 19,501 lbs.); single unit truck (19,500 lbs. < G.V.W. < 26,001 lbs.); single unit truck (G.V.W. > 26,000 lbs.); single unit truck (G.V.W. unknown); two unit truck-tractor with semi-trailer or truck with cargo trailer; multi-unit truck or truck-tractor with two or more trailers; truck-trailer only.

Other Motor Vehicle - (SPECIAL VEHICLES) snowmobiles; farm vehicles, except trucks; dune or swamp buggies; construction equipment other than trucks; ambulance, emergency vehicle; large limousine--more than four doors; self-propelled

campers and motor homes; fire trucks. (BUSES) school bus; intercity bus; urban bus; other bus. (AUTOMOBILES) 2-door passenger car; 4-door passenger car; station wagon, excluding van or truck based; convertible; on/off road vehicle (e.g., Jeep, Scout, Bronco, Blazer, etc.); car, pickup body (e.g., El Camino, etc.); other type automobile.

Classify the accident according to the highest priority unit involved in the accident where pedestrians & nonmotorists are the highest priority followed by motorcycles, trucks, and other motor vehicles. Examples:

- 1) If a motorcycle strikes a pedestrian, classify the accident as a pedestrian & nonmotorist accident. The two units involved are a motorcycle and a pedestrian; of the units involved, the one with the highest priority is the pedestrian.
- 2) If a motorcycle strikes a truck, classify the accident as a motorcycle accident.
- 3) If a truck strikes a passenger vehicle, classify the accident as a truck accident.
- 4) If two passenger cars collide, call the accident an other motor vehicle accident.
- 5) If a truck strikes a motor vehicle not in transport (i.e., parked) with occupants (i.e., nonmotorists), classify the accident as a pedestrian & nonmotorist accident.
- 6) If a truck strikes a stationary vehicle on a road

shoulder with occupants, classify the occupants of the vehicle as nonmotorists and classify the accident as a pedestrian & nonmotorists accident. If the same stationary vehicle above does not have occupants and is struck, the accident would be classified as a truck accident.

Most Severe Police Reported Injury--Classify the accident by the most severe police reported injury. Code into three classes, fatal injury (K); incapacitating injury (A); [or non-incapacitating evident injury (B); possible injury (C); no injury (O); or unknown injury (U)] (see ANSI 16.1-1976, section 3.1 p. 21).

Towaway vs. Non-towaway Accidents--Classify B, C, O, U severity accidents as towaway or non-towaway. If the police report indicates any of the involved vehicles were towed from the accident scene, classify the accident as towaway; otherwise classify as non-towaway.

Please find below some typical examples of questions involving the classification of accidents.

Question: A vehicle ran off the road, struck a small tree and continued on eventually striking a pedestrian. Would this be coded as an other motor vehicle accident since ANSI requires that, in a pedestrian accident (section 2.6.4, p. 17), the first harmful event must involve a collision with a pedestrian?

Answer: In NASS we are concerned with what is defined in

ANSI as a motor vehicle traffic accident [MVTA] (section 2.3.20, p. 10). The components of a MVTA are: (a) a police report, (b) a harmful event, (c) from an unstabilized situation, (d) involving at least one motor vehicle, (e) in transport [in motion or on a roadway] such that (f) the harmful event occurred on a trafficway or the unstabilized situation originated on a trafficway. Beyond this we are not concerned with subdividing accidents according to ANSI. Therefore, this accident should be classified as pedestrian accident. The first harmful event is not a part of the sampling criteria. Remember that vehicle type, towing, and injury severity are the three independent measures used in deriving the stratification.

Question: Are persons in a train which hits a car considered as nonmotorists? If so, is the accident classified as a pedestrian & nonmotorist accident?

Answer: Trains on their tracks which strike or are struck by motor vehicles are considered as stationary or non-stationary objects for the purposes of NASS. The persons on the train (including the operator(s)) are not considered to have been involved in the accident.

Question: When a hit and run accident occurs, and no information is available about the striking vehicle, how do you classify the accident on the stratification record?

Answer: You consider this vehicle to have been an other motor vehicle. You then complete the stratification based upon this assumption. If you have information on the police report that indicates the hit and run vehicle was either a truck or a motorcycle then you treat it appropriately for sampling purposes.

Question: How is a street cleaner classified?

Answer: If a street cleaner vehicle is encountered during stratification, stratify according to model type. Some of these vehicles are essentially straight trucks with the cleaning equipment on the rear bed - stratify these as trucks. Other street cleaning models are essentially special vehicles - stratify them as other motor vehicles. If you can't determine which model type the vehicle falls under, stratify as other motor vehicle. However, remember that many cities buy only one type, this source could be used as a basis for clarification.

3.0 OVERVIEW OF SAMPLING ACTIVITIES

The procedure for designating the sample of accidents will include the following three tasks for each team:

- Task 1. Contact specified police jurisdictions on specified days to process the police accident reports (PARS);
- Task 2. Review PARS at the jurisdiction, listing and classifying them into accident categories (strata) using the NASS Stratification Record form;
- Task 3. Complete a Sampling Worksheet, identifying from the list the accidents that are to be investigated for NASS.

Most teams will perform these tasks on Monday and on Thursday of each week. The methods to be used by a team to accomplish each of these tasks depend on the PSU. The procedure to be followed by each team is spelled out in Section 3.2.

3.1 General Procedures

3.1.1 Case Load Assignment Sheet (CLAS) (See Section 3.2)

Contact each of the jurisdictions indicated on the CLAS on the day specified. Determine the accidents which qualify for NASS that have not been listed on a previous visit. If reliable information on the accident type and severity can be obtained via the telephone, the jurisdiction need not be visited for listing purposes. (Of course, if an accident is subsequently chosen for investigation, a visit will be required).

For most teams, the jurisdictions are given in two different visitation patterns on the CLAS (and also on the

Sampling Worksheet) Thus, some jurisdictions are to be contacted on Monday and on Thursday, others are to be contacted on Monday or on Thursday (i.e., only one visit each week). For this latter group, the team is to decide which of the days, Monday or Thursday, the jurisdiction will be contacted; once the decision is made, the jurisdiction should continue to be contacted on that day each week. If it should become necessary to change the day of contact for any jurisdiction your zone center should be notified before the change is implemented.

The agencies to be visited on a given day should be contacted by the team in the most convenient way. Plan the trips generally so as to arrive last at the agency with the greatest expected number of PARS. At that time, because all accidents to be listed in the PSU for the day have been recorded, the sampling worksheet can be completed to identify the accidents to be investigated. This will reduce to the fewest, the number of copies of PARS that need be made. Also, the largest number of sample accidents will most likely be selected from the largest jurisdiction in the PSU.

3.1.2 Stratification Record

At each agency designated on the bottom of the CLAS, determine the PARS that are to be listed. Enter the jurisdiction name in column (1) of the Stratification Record. Sort the PARS in ascending order by date, time, or PAR number. (If the number of PARS is large this sorting can be

postponed until after the accidents have first been classified by type and severity. Only the accidents with the same type and severity need to be sorted).

After the PARS have been sorted, the Stratification Record is to be completed. Beginning with the earliest report, determine the stratum in which it belongs:

- a. Determine if a pedestrian or nonmotorist was involved,
 - (1) If so, it belongs in one of the A-C strata;
 - (2) If not,
- b. Determine, if a motorcycle was involved,
 - (1) If so, it belongs in one of the D-F strata,
 - (2) If not,
- c. Determine if a truck was involved,
 - (1) If so, it belongs in one of the G-J strata,
 - (2) If not, it belongs in one of the K-N strata.

Next, determine the most severe injury experienced by any accident victim.

- a. If a fatality occurred, a "1" should be placed in the column indicating the appropriate accident type fatality stratum: A, D, G, or K.
- b. If no fatality occurred, but an "A" injury occurred, place a "1" in the appropriate column: B, E, H or L.
- c. If neither a fatality nor an "A" injury occurred, a "1" should be placed in one of the six "B, C, O, or "U" columns: C, F, I, J, M, N.
- d. For pedestrian & nonmotorist or motorcycle accidents, these are columns C or F.

e. If a truck or other motor vehicle accident occurred and the severity is "B, C, O or U", determine if any vehicle was towed away:

- (1) If so, place a one in column I or M,
- (2) If not, place a one in column J or N.

Repeat the above procedure for each PAR. For each jurisdiction the numbering within a column of the Stratification Record should begin at one for the first PAR entered and increase for each additional PAR classified into that stratum.

After classifying all applicable PARS and entering 1, 2, 3, etc. in the appropriate column, draw a line across the sheet just below the last PAR for each jurisdiction. Write the word "total" in column (2), transcribe the highest number in each column into this row. Add these numbers. The sum should equal the number of PARS listed. If it does not, recheck your work.

3.1.3 Accident Sampling Worksheet (See Section 3.2.3)

Complete an Accident Sampling Worksheet on the days given by the CLAS. Most teams are to complete an Accident Sampling Worksheet on two occasions each week; on Monday, after contacts at all jurisdictions scheduled for the day have been made, and on Thursday, after all contacts scheduled for Thursday have been made. The worksheet for a team may consist of up to five pages. Complete the information required at the top of the worksheet (day, date, etc.). Gather together all Stratification Records completed for the day.

1. Column (6): N_1 : Transcribe the counts from the rows labeled "Total" on the Stratification Record into Column (6) of the Sampling Worksheets. Insure that counts are placed in the proper stratum for the correct jurisdiction.
2. Column (7): N_1W_1 : Multiply the column (6) entries by the preprinted column (5) entries, recording the results of each multiplication in column (7). Add the column (7) entries and record the total sum for the worksheet at the foot of column (7) in the row labeled "Total".

At this point, a portion of the CLAS is completed as follows (these instructions refer to the CLAS form dated 12/4/78):

1. Enter on row 3 (in the column of the CLAS for the contact day) the total of column (7) of the SW;
2. Enter on row 4 of the CLAS the ratio of the entry on row 3 to the entry on row 1; show the result to two decimals. This ratio is called the "first sampling interval";
3. Enter on row 5 of the CLAS the product of row 4 times the constant 0.75, show the result to two decimals. This entry is called the "Trial Interval";
4. Now examine the entries in column (5) of the SW, count the number of accidents listed on the SW that have values of W_1 equal to or greater than the Trial Interval given on row 5 of the CLAS. Enter this count on row 6 of the CLAS.
 - If the entry on row 6 is zero, or greater than or equal to the entry on row (1), then transcribe the entry on row 4 to row 10 of the CLAS and go to row 11 of the CLAS for the next operation.
 - If the entry on row 6 of the CLAS is not zero, and less than row (1), all accidents that made up the count are to be in the sample. These are identified as "Certainty Cases". Continue at row 7 of the CLAS.
5. Enter on row 7 of the CLAS, the total weighted accident count for the certainty cases identified

in step 6 of the CLAS; this is the total of the column (7) entries on the SW for the certainty accidents. After determining this total, delete (cross out) all column (7) entries on the SW for the certainty cases and determine a new total of the remaining column (7) entries on the SW, enter this total on the SW at the foot of column (7).

6. Enter on row 8 of the CLAS the remaining number of accidents to be selected. This is the difference between the row 1 and row 6 entries on the CLAS.
7. Enter on row 9 the remaining weighted accident count. This is the difference between the row 3 and the row 7 entries on the CLAS. This result must equal the new total of the column (7) entries that you have just entered at the foot of column (7) of the SW; if it does not, recheck your work.
8. Enter on row 10 of the CLAS the second sampling interval; this is the ratio of the entry on row (9) to row (8) of the CLAS. Show the result to two decimals.

The following step involves the sampling worksheet.

1. Complete column (8) $\sum N_i W_i$: Cumulate the column (7) entries on the SW, recording the cumulation in column (8); do not include any column (7) entries for the certainty cases. Thus, each value in column (8) is the sum of all column (7) entries for noncertainty accidents up to and including that row. The last entry in column (8) must equal the new total shown at the foot of column (7). If it does not, recheck your work.

The next step involves determining the random cumulants using the CLAS form:

1. Multiply the row (10), second sampling interval by the row (2) random number. Record this in row (11), first random cumulant; and
2. Repeatedly add the row (10) interval to the row (11) first cumulant and obtain the remaining cumulants, recording them in rows (12) through (18) on the CLAS.

Transcribe the Random Cumulants onto the Sampling Worksheet in the following way:

1. Column (9): Random Cumulants: beginning with the first cumulant from the CLAS and starting at the top of the worksheet, locate the first row in column (8) whose entry equals or exceeds the cumulant. Record the First Random Cumulant in column (9) of this row. Repeat this process until the last row has been reached. (NOTE: If the entry in column (8) is so large that more than one cumulant falls on that row, transcribe all the random cumulants that belong in that row.) At this point, the number of random cumulants transcribed into column (9) should equal the number of accidents to be sampled as given in row (8) of the CLAS. If not, recheck your work.

2. Column (10): Number of Accidents Sampled: Record the number of cumulants (1 or more) appearing in column (9) for the row.

3. Column (11): Selected Cases: Examine the column (6) entry for all rows now having an entry in column (10) (i.e., for which accidents are to be sampled).
 - If the entry in column (6) is less than or equal to the entry in Column (10), then all accidents in the stratum from that jurisdiction are to be investigated.

 - a. If the entry in column (6) is greater than the entry in column (10), a further step of sampling is required. In this case the following must be done on the NASS Sample Selection within Stratum/Jurisdiction (SSSJ) form:
 - (1) Write the date of contact in the heading of the SSSJ. Transcribe column (6) of the SW to row (2) of SSSJ and column (10) of the SW to row (3) of SSSJ for the appropriate contact date.

 - (2) Divide row (2) by row (3) to form the stratum/jurisdiction interval. Record this in row (4).

 - (3) Multiply row (4) by row (1) to get the first SJ random cumulant. Record this in row (5).

(4) Repeatedly add the row (4) SJ interval to the row (5) cumulant and obtain the remaining cumulants. Record these in rows (6) through (8), stopping when the random cumulant exceeds row (2).

b. Round the random cumulants up (e.g., 3.1 and 3.8 both are rounded up to 4), and transcribe the numbers onto the Sampling Worksheet, column (11). To identify the selected accidents, examine the stratum entries for the jurisdiction given on the Stratification Record. These numbers run from one up to the number which occurred and uniquely identify a PAR number, date and time.

3.2 Listing and Sampling Instructions

The Case Load Assignment Sheet (CLAS), the Stratification Record, the Accident Sampling Worksheet, and the Sample Selection within Stratum/Jurisdiction form to be used in the Arkansas PSU are attached.

3.2.1 Case Load Assignment Sheet

The CLAS provided is unique for the PSU. It covers team activities for the period specified in the upper right hand corner; updated versions of the CLAS will be sent to you periodically.

The CLAS lists the jurisdictions the team is to contact, specifies the days the contacts are to be made, and identifies the PARS that are to be listed at each visit. The instructions for completing the entries in the CLAS are given in Section 3.1.1.

3.2.2 Stratification Record

All teams will use the same Stratification Record form. Make xerox copies of the form provided for the use of the

team. Instructions for completing the form are given in Section 3.1.2.

3.2.3 Accident Sampling Worksheet

The forms provided are unique to the PSU; xerox them for the use of the team. A set of the forms is to be completed each day that sampling is called for by the CLAS. Instructions for completing the worksheets are given in Section 3.1.3.

3.2.4 Sample Selection Within Stratum/Jurisdiction

All teams will use the same Sample Selection within Stratum and Jurisdiction form. Three pages are provided for use; additional copies will be sent out along with the updated versions of the CLAS.

3.3 Sampling in Unusual Circumstances

The team is to contact jurisdictions, complete the necessary Stratification Records, and complete the Sampling Worksheet on the days scheduled. The following rules are to apply on those unusual occasions when these activities cannot be completed as scheduled.

If contacts and necessary Stratification Records are not completed on the day scheduled:

- (1) Postpone completion of the Sampling Worksheet until the following day. Inform your zone center of the circumstances;
- (2) Complete the required contacts and Stratification Records on the following day and immediately designate the sample (complete the Sampling Worksheet) as instructed by the CLAS for the day scheduled;

- (3) If scheduled contacts and necessary Stratification Records are not completed by the end of the day following the scheduled day:
 - a. Designate the sample as instructed by the CLAS for the scheduled day using the accidents listed on the Stratification Records that are available, and
 - b. Postpone contact of the still outstanding jurisdictions until the next scheduled day of contact; at that time, include those PARS that would have been recorded had the jurisdictions been contacted as scheduled.

Table 3-1
CASE LOAD ASSIGNMENT SHEET

PSU: ARKANSAS

Period: January 1 - January 18

Computations to designate sample strata and jurisdictions	Contact Days*					
	Monday 1	Thursday 4	Monday 8	Thursday 11	Monday 15	Thursday 18
1. Number of sample accident to be selected	5	2	4	3	5	2
2. Random Number	.016	.737	.641	.884	.941	.114
3. Weighted accident count: (Col 7 of last page of SW)						
4. First sampling interval: (3)/(1) (2 decimals)						
5. Trial interval: (4) x .75 (2 decimals)						
6. Number of listed accidents with weight in Col. 5 of SW greater than or equal to the trial interval: a. If the number of cases is zero, or is greater than or equal to row (1), transcribe the row (4) entry above into row (1) below, and skip to step (11) b. If the number of cases is greater than zero and less than row (1), these accidents are in sample with certainty; assign them case numbers, and continue with step (7).						
7. Total weighted accident count for accidents identified in step (5b). (Delete the entry for these cases in Col 7 of the SW, retotal Col. 7 and complete Col. 8 with remaining cases)						
8. Remaining number of accidents to be selected: (1) - (6)						
9. Remaining weighted accident count: (3) - (7) (This must equal the new total of Col 7 on the SW.)						
10. Second sampling interval: (9)/(8) (Use 2 decimals)						

CASE LOAD ASSIGNMENT SHEET (CONTINUED)

PSU: ARKANSAS

Period: January 1 - January 18

Computations to designate sample strata and jurisdictions	Contact Days					
	Monday 1	Thursday 4	Monday 8	Thursday 11	Monday 15	Thursday 18
<u>TRANSCRIBE TO COLUMN (5) OF SAMPLING WORKSHEET</u>						
11. First random cumulant: (2) x (10)						
12. Second random cumulant: (11) + (10)						
13. Third random cumulant: (12) + (10)						
14. Fourth random cumulant: (13) + (10)						
15. Fifth random cumulant: (14) + (10)						
16. Sixth random cumulant: (15) + (10)						
17. Seventh random cumulant: (16) + (10)						
18. Eighth random cumulant: (17) + (10)						

*Contact to list all accidents added to jurisdiction file since the previous contact:

Contact on Monday and Thursday - State Patrol Dumas, Monticello, Dumas, Crossett, McGehee.

Contact on Monday - Hamburg, Lake Village, Ashley Sheriff, Star City, Drew Sheriff, Gould

Table 3-2

Mass Classification Record

ESR	Jurisdiction	Date	Time	Number	Professional/		Photocopy			Truck		Other Vehicle	
					Motorist	Operator	A	B, C, D, E	K	A	K	A	
	(1)	(2)	(3)	(4)	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													

Total Mass accidents classified on this page:

Subject to

page of

Table 3-3

MASS Accident Sampling Worksheet

FD-901 - November

Day: _____ Date: 1/1/1981

Accident Type Pedestrian and Non-Motorist

Accident severity code	Contact Agency	Jurisdiction	Stratum ID	W ₁	H ₁	H ₁ W ₁	F ₁ W ₁	Random cumulant	Number of accidents sampled	Selected cases	Cumulative
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
K	M & Th	State Police - Dumas	A	25							
	M & Th	Dumas		25							
	M & Th	Monticello		25							
	M & Th	Crossett		25							
	M & Th	McGehee		25							
	M	Hamburg		50							
	M	Lake Village		50							
	M	Sheriff Ashley		50							
	M	Star City		50							
	M	Sheriff Drew		50							
	M	Gould		50							
A	M & Th	State Police - Dumas	B	15							
	M & Th	Dumas		15							
	M & Th	Monticello		15							
	M & Th	Crossett		15							
	M & Th	McGehee		15							
	M	Hamburg		30							
	M	Lake Village		30							
	M	Sheriff Ashley		30							
	M	Star City		30							
	M	Sheriff Drew		30							
	M	Gould		30							
B,C,O,U	M & Th	State Police - Dumas	C	5							
	M & Th	Dumas		5							
	M & Th	Monticello		5							
	M & Th	Crossett		5							
	M & Th	McGehee		5							
	M	Hamburg		10							
	M	Lake Village		10							
	M	Sheriff Ashley		10							
	M	Star City		10							
	M	Sheriff Drew		10							
	M	Gould		10							
SUBTOTAL											

Accident Type: Motorcycle

MSU 03

Days: _____ Date: _____

Accident Severity Code	County	Corporation	MSU	Days	Rate	MSU	Days	Rate	MSU	Days	Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
K	M & TH	State Police - Oumas	D	25							
	M & TH	Oumas		25							
	M & TH	Monticello		25							
	M & TH	So.sett		25							
	M & TH	Mounee		25							
	M	Hambourg		50							
	M	Lake Village		50							
	M	Sheriff Ashby		50							
	M	Star City		50							
	M	Sheriff Drew		50							
	M	ould		50							
A	M & TH	State Police - Oumas	E	18							
	M & TH	Oumas		18							
	M & TH	Monticello		18							
	M & TH	So.sett		18							
	M & TH	Mounee		18							
	M	Hambourg		36							
	M	Lake Village		36							
	M	Sheriff Ashby		36							
	M	Star City		36							
	M	Sheriff Drew		36							
	M	ould		36							
B,C,O,U	M & TH	State Police - Oumas	F	12							
	M & TH	Oumas		12							
	M & TH	Monticello		12							
	M & TH	So.sett		12							
	M & TH	Mounee		12							
	M	Hambourg		24							
	M	Lake Village		24							
	M	Sheriff Ashby		24							
	M	Star City		24							
	M	Sheriff Drew		24							
	M	ould		24							
SUBTOTAL											

Accident Type: Truck

POL 03

Day: _____ Date: ____/____/____
 (mo) (day) (yr)

Accident severity code	Day of Month	Jurisdiction	Category ID	N ₁	N ₂	F ₁ N ₁	2N ₁ W ₁	Random cumulants	Number of accidents involved	Selected cases	C ₁ nu
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
K	M & Th	State Police - Dumas	G	25							
	M & Th	Dumas		25							
	M & Th	Monticello		25							
	M & Th	Crossett		25							
	M & T	McGehee		25							
	M	Hamburg		50							
	M	Lake Village		50							
	M	Sheriff Ashley		50							
	M	Star City		50							
	M	Sheriff Drew		50							
M	Gould		50								
A	M & Th	State Police - Dumas	H	25							
	M & Th	Dumas		25							
	M & Th	Monticello		25							
	M & Th	Crossett		25							
	M & Th	McGehee		25							
	M	Hamburg		50							
	M	Lake Village		50							
	M	Sheriff Ashley		50							
	M	Star City		50							
	M	Sheriff Drew		50							
M	Gould		50								
B, C, O, U Towaway	M & Th	State Police - Dumas	I	8							
	M & Th	Dumas		8							
	M & Th	Monticello		8							
	M & Th	Crossett		8							
	M & Th	McGehee		8							
	M	Hamburg		16							
	M	Lake Village		16							
	M	Sheriff Ashley		16							
	M	Star City		16							
	M	Sheriff Drew		16							
M	Gould		16								
SUB-TOTAL											

Accident Type: Traffic Date: 12/11/03

Accident Type	County	Jurisdiction	Station	Count
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
A.C.O. 1 Non-Towaway	M & Th	Dumas Police	Dumas	J	2					
	M & Th		Dumas		2					
	M & Th		Monticello		2					
	M & Th		Crosssett		2					
	M & Th		Keene		2					
	M		Hamburg		4					
	M		Lake Village		4					
	M		Sheriff Ashley		4					
	M		Star City		4					
	M		Sheriff Drew		4					
M		Wild		4						
Accident Type: Other Vehicle										
K	M & Th	Dumas Police	Dumas	K	25					
	M & Th		Dumas		25					
	M & Th		Monticello		25					
	M & Th		Crosssett		25					
	M & Th		Keene		25					
	M		Hamburg		50					
	M		Lake Village		50					
	M		Sheriff Ashley		50					
	M		Star City		50					
	M		Sheriff Drew		50					
M		Wild		50						
A	M & Th	Dumas Police	Dumas	A	25					
	M & Th		Dumas		25					
	M & Th		Monticello		25					
	M & Th		Crosssett		25					
	M & Th		Keene		25					
	M		Hamburg		50					
	M		Lake Village		50					
	M		Sheriff Ashley		50					
	M		Star City		50					
	M		Sheriff Drew		50					
M		Wild		50						
SUBTOTAL										

Accident severity code	Year (July 57)	Jurisdiction	Stratification ID	N ₁	N ₂	N ₁ W ₁	N ₂ W ₁	Random concurrents	Number of accidents sampled	Adjusted cases	Count
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
B C O U Towaway	M & Th	State Police - Dumas	M	5							
	M & Th	Dumas		5							
	M & Th	Monticello		5							
	M & Th	Crosssett		5							
	M & Th	Mcunehee		5							
	M	Hamburg		10							
	M	Lake Village		10							
	M	Sheriff Ashtab		10							
	M	Star City		10							
	M	Sheriff Drew		10							
M	Gould		10								
B C O U Other Towaway	M & Th	State Police - Dumas	T	1							
	M & Th	Dumas		1							
	M & Th	Monticello		1							
	M & Th	Crosssett		1							
	M & Th	Mcunehee		1							
	M	Hamburg		2							
	M	Lake Village		2							
	M	Sheriff Ashtab		2							
	M	Star City		2							
	M	Sheriff Drew		2							
M	Gould		2								
SUBTOTAL											
TOTAL											

Total in column (5) must equal the sum of all accidents on the Stratification Record.

Table 3-4

NAFO Sample Collection Within Stratum/Jurisdiction

PSU _____

Computation to designate sample cases if, and only if, Column 6 of SW is greater than Column 10 of SW	Contact Date							
1 Random Number	029	.356	267	478	766	478	701	862
2 Column 6 of SW								
3 Column 10 of SW								
4 Stratum Jurisdiction (SJ) Internal (2) - 0' (use two decimals)								
5 First SJ Random Cumulant (4) + (1)								
6 Second SJ Random Cumulant (5) + (4)								
7 Third SJ Random Cumulant (6) + (4)								
8 Fourth SJ Random Cumulant (7) + 4								

4.0 OVERVIEW OF INFORMATION TO BE COLLECTED ON CASES
SAMPLED

For each case sampled, please include in the case report a copy of the police report, newspaper photos, article, correspondence, collision diagram with diagram log, slides (including index), the applicable continuous sampling subsystem data collection forms with field logs, hospital injury records, driver records, and CRASH runs.

4.1 Sequencing of Case Materials

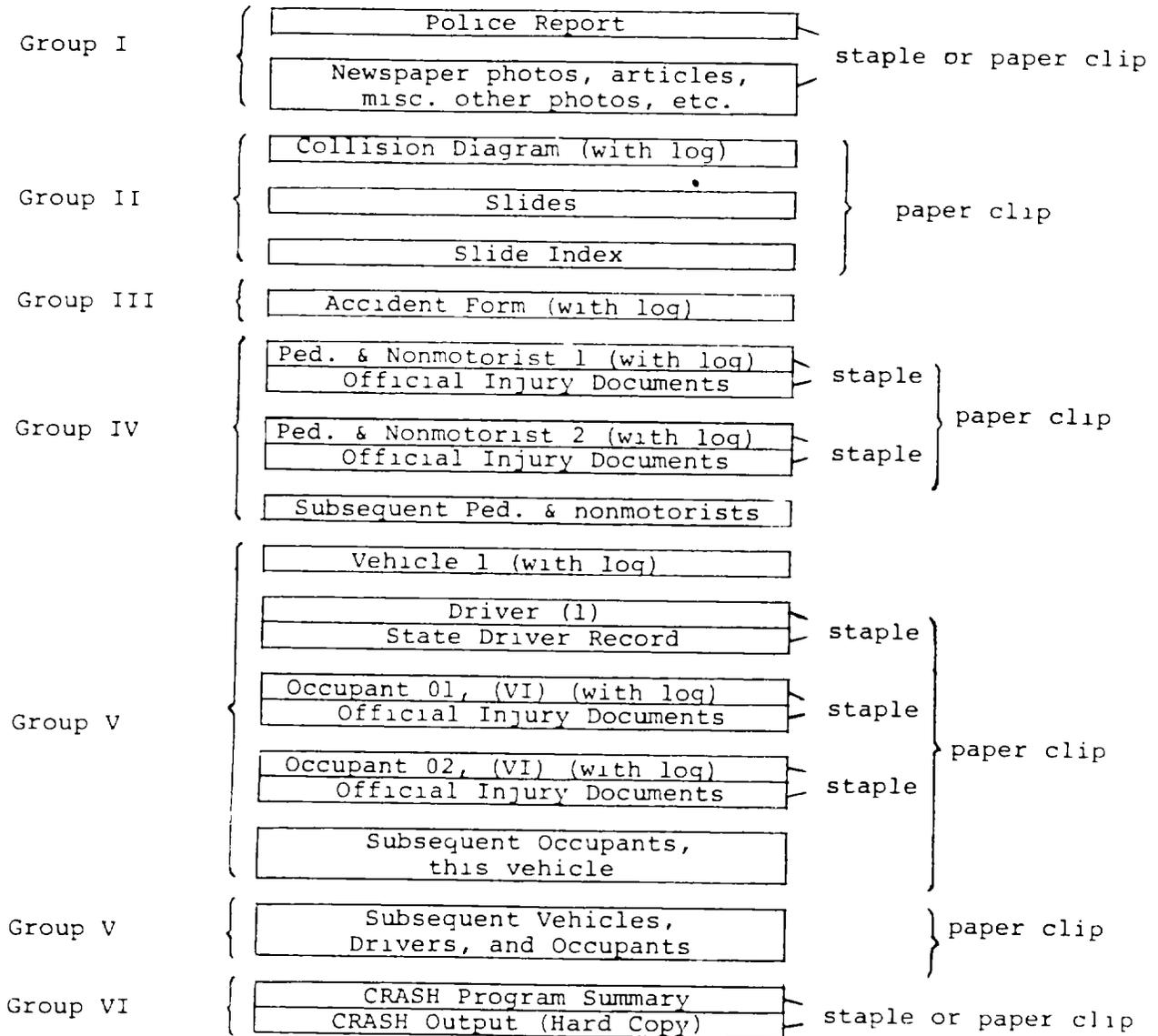
Case report forms and miscellaneous materials are to be sequenced in conformity with the guidelines depicted in Figure Figure 4-1. There are six distinct groupings which may exist with each case, and while the number of groupings may vary with each accident, it is important for the case reviewer (team or Zone Center) that the composition of the six groups be maintained.

The first group contains the police report, newspaper photographs, articles, and other miscellaneous, non-NASS generated materials. This group will give the Zone Center reviewer a general appreciation of the accident from non-NASS sources and facilitates review of sampling. The documents in this group should be bound with either a paper clip or stapled. The group will appear in every case, although it will often be composed only of the police report.

The second group contains the Collision Diagram with Collision Diagram Log, slides, and the slide index; thus, providing the reviewer with a general overview of the case based upon the NASS investigation. Differences between the two versions (Non-NASS and NASS) are to be expected periodically, and preliminary review of this and the preceding group will alert the reviewer to those differences and their eventual resolution in the final NASS version. This group should appear in every case, bound together with a paper clip.

Figure: 4-1

SEQUENCE OF CASE MATERIALS



Third, the Accident Form with the Accident Log on the back of the last page forms a group which will appear in every case.

Fourth, all pedestrian & nonmotorist forms (with logs) should be grouped together, beginning with pedestrian & nonmotorist 1. Official injury information obtained for any pedestrian & nonmotorist should be stapled to the back of the respective form. This will collate the injury data to the pedestrian & nonmotorist and save time which might be lost searching through the various forms to make the correct association. Pedestrian & nonmotorist forms will appear only in cases where applicable; it is desirable to use a paper clip to bind the forms in this group if there are more than one.

The fifth group contains forms for a vehicle, its driver, the state driver record for that driver, all the occupants contained in the vehicle, and any official injury documents for those occupants. The first form in this group is the Vehicle form (with log). The Driver form appears next and will have any state driver record stapled to the back of it. This will be followed by the first Occupant form (with log) for this vehicle which has any official injury documents stapled to the back of it. All additional Occupants Forms (with log) will follow in chronological order (Occupant 02, (V1), Occupant 03, (V1), etc.). At least one group of this type will appear in every NASS case. All the forms associated with this group should be bound

together with a paper clip. Additional vehicles, their drivers, state driver records, occupants, and official injury documents should be grouped in a similar manner. Thus, each group may be thought to represent a vehicle and its occupants; and each such group physically distinguishes one vehicle and its occupants from any other.

Finally, the sixth group is composed of the CRASH Program Summary and the CRASH Output (hard copy), if the program has been exercised for the collision. Upon reviewing the above forms and having become familiarized with the accident, the reviewer is then prepared to evaluate both the appropriateness of using the program and the viability of the various inputs on the CRASH Program Summary. These two items, the summary and any output (always include the input data), should be bound together with a paper clip to constitute the last group in the envelope, if CRASH has been used.

4.2 Information Required on Field Forms (Mandatory Variables)

Case Identification Variables--When using the remote data entry system to enter the field data certain information is required on each Field form (log data are not entered) before it will be accepted. Every Field form and log submitted must have a Primary Sampling Unit Number, a Case Number, Transaction Code, and Version Number. The Record Number and Version Number will be preprinted on each of the forms. Team members should fill out the Primary Sampling Unit Number, Case Number, and the Transaction Code

Number.

Accident Form--For each accident investigated one Accident Form must be filled out. The mandatory information needed on this form is Year of Accident, Month of Accident, Stratification, First Harmful Event, Number of Vehicle Forms Submitted, and Number of Pedestrian & Nonmotorist Forms Submitted.

Pedestrian & Nonmotorist Form--If a Pedestrian & Nonmotorist Form is submitted, the only mandatory data item is Pedestrian & Nonmotorist Number.

Vehicle Form--For each accident investigated, at least one Vehicle Form must be submitted. The mandatory information to be included on this form consists of the assigned Vehicle Number and the Number of Occupant Forms Submitted.

Driver Form--For every Vehicle Form there must be included one Driver Form. The mandatory data items to be filled out on the Driver Form are Vehicle Number and Driver Presence in Vehicle.

Occupant Form--When Occupant Forms are filled out, Vehicle Number and Occupant Number must always be present.

Treatment of Missing Cases--When accident-involved drivers, vehicles, occupants or non-occupants cannot be located or interviewed and all data items are missing, the appropriate form must be filled out with missing data codes and submitted with the case. One exception to this rule is permitted. In accidents which involve a bus, complete an

Occupant Form for every person where information can be obtained (i.e., either through the police or leads which subsequently develop). For those occupants where no information exists no Occupant Form is required. Once again, this exception is for buses only.

4.3 Update Procedures For Hardcopy Field Forms

Data elements which may be updated in the hard copy case report are restricted to certain variables which appear on either the Driver, Pedestrian & Nonmotorist, or Occupant Forms. No other data will be updated if it is acquired after the initial submission of the case. Note that for RDE any variable except for the mandatory variables may be updated. Update records have been developed for the variables which are allowable update candidates for case reports submitted to the Zone Centers. Update records are not to be included with the initial submission of the case; they will be used only when the information they contain arrives after the expiration of the time available for the initial case submission.

This form is to be used if Driver License Status (D14), license restrictions (D15, D16), measured blood alcohol (D24) and convictions/suspensions (D25-D28) are not known at the time of initial submission. The investigator is to complete the required sections prior to initial case submission so that the subsequently acquired information may be associated with the right case and vehicle number. In

addition, make sure the question numbers on the Driver Form which are to be updated are circled. The newly acquired information should be entered on the front of the update form and any supporting documents attached to the back. The driver's name is to be sanitized as well as any attached records before they are forwarded to the Zone Center.

Pedestrian & Nonmotorist Update Record

This form is to be used when the investigator expects to receive official medical data regarding injuries or treatment received by any pedestrian/nonmotorist, and the official medical data were not obtained from the hospital, treating physician, etc., before the initial submission. The investigator is to complete the appropriate sections (and circle variable numbers on the field form and/or check the update candidate block on page 7 as applicable) prior to initial case submission so that the subsequently acquired official medical data may be associated with the right case and pedestrian or nonmotorist number. Additional information required on this form from the initial case submission allows the investigator to update variables P8, P9, P16, P17, and P21 through P62 based on subsequent receipt of official medical data where necessary. These data would be difficult to update without recorded knowledge regarding the initial coding of Treatment - Mortality, Hospital Stay, and injury data. The data on the specific injuries coded on the initial submission (variables P21-P62) may be combined with

the new injury data using the Nass injury coding rules to revise the injury coding on the updated version.

Occupant Form Update Record

This form is similar to the Pedestrian & Nonmotorist Update Record with the exception that the variables have different numbers, and there exists the need to identify both the vehicle and occupant number. It should be used when the investigator expects to receive official medical data after the initial submission. The investigator is to complete the appropriate sections (and circle variable numbers on the field form and/or check the update candidate block on page 7 as applicable) prior to initial case submission so the subsequently acquired official medical data may be associated with the right case, vehicle, and occupant number. Additional information required on this form prior to initial case submission allows the investigator to update variables 08, 09, 019, 020, and 028 through 069 based on subsequent receipt of official medical data. These data would be difficult to update without recorded knowledge regarding the initial coding of Treatment - Mortality (019), Hospital Stay (020), and injury data (028-069). This information may then be combined with the new injury data using the NASS injury coding rules to revise the variables on the updated version.

Update Filing and Submission Instructions

The investigator must complete each of the sections on

the above forms as required prior to the initial submission if the data to be derived from the Driver Record or Official Medical Data has not arrived before an initial case submission. This allows the new information (update form) to be associated with the corresponding field form in the initial submission, and provides those data included on the same submission to be combined with the new data using the NASS injury coding rules.

All update records may then be stored in a three ring binder and segregated into two sections: 1) Driver Form Update Records, and 2) Pedestrian & Nonmotorist and Occupant Form Update Records. Each new addition of an update record may then be entered alphabetically based on the name of the driver, pedestrian/nonmotorist or occupant in the appropriate section. This will facilitate retrieval of the update record when the driver record or official medical data is received.

The name of the individual and any other descriptive information, unique to the team, which may identify the individual should be sanitized from both the update record and the attached reports after the information from the latter has been included on the update record. *

Update records should be accumulated, packaged in an individual 9 1/2 x 12 inch manilla envelope (but not one envelope for each update) which identifies the PSU and is boldly marked updates, and sent to the Zone Center on a

periodic basis according to the schedule in Section 5.2.

The update records, described above, will be attached to the corresponding forms included in the initial submission by the Zone Center.

4.4 Form Logs

The Field forms (Accident, Pedestrian & Nonmotorist, Vehicle, Driver, and Occupant) and the Collision Diagram have a unique log printed to the back of the last page. These logs will provide information with respect to the acquisition and processing of accident data in the NASS system. This information will ultimately serve to establish reasonable expectations and to identify and evaluate Zone Center quality control effectiveness and to provide more timely feedback to team members. Careful examination of the logs will reveal that minimal effort from the investigator is required to answer the questions, particularly if the entries are made in conjunction with and at the time the particular task is accomplished. The form logs also contain sections which will be completed by the Zone Center during the review process. The majority of the elements on the form logs are self-explanatory; therefore, only certain sections will be discussed.

Accident Log

The sections to be completed by the PSU are identified, and include the one which accounts for the number of forms which are required and included with the case. The in-

formation in this section is transcribed later to the front of the case envelope. Many of the forms which are needed under the required component of this section may be identified early in the investigation; thus, this will serve to aid the investigator as to his/her status while the case is in progress. Also, at the time of the initial submission, or final submission if there are to be no updates for the case, the investigator should check to see that the number of forms included equals the number of forms required, with the exception of the Medicals. The number of medicals (Official Medical Data) required should reflect the number of people who were treated in a hospital, medical clinic, etc. This is true independent of the ability of the PSU to obtain the data. It represents accident-involved people who received medical treatment, and should be tallied on that basis under the number of medicals required. The number of medicals included will reflect the number of medicals (Official Medical Data) on a per person basis which are included in the case at the time of initial submission, or final submission if there are to be no updates for the case.

Pedestrian & Nonmotorist Log

The interview contact record is to be completed using the responses to the "manner" and "result" components of the record which appear on the back of page 7 of the form. The "other" response for "result" is to be used, for example, when the investigator finds the address or phone number on

the police report was fabricated. If multiple interviews are accomplished as a result of a single successful contact, document the number of attempts for one person and a single success for all other persons (e.g., four attempts to contact a number of people at a single location or phone, the first three are unsuccessful but on the fourth all four interviews required are obtained - surrogate or same person - document four contacts for one person and only one for the other three).

If the official medical injury data is requested but not received at the time of the case submission the investigator should complete a pedestrian & nonmotorist update form.

Vehicle Log

The Vehicle Log must be completed for all vehicles.

Driver Log

Vehicles where the driver was not present and no interview was applicable are to be indicated by coding "1" in the appropriate column of the driver log. This entry, along with those in columns 12-20, will complete the Driver Log in this specific situation.

If official driver records were requested but not received at the time of the case submission the investigator should complete a Driver Form Update Record.

Occupant Log

The interview contact record is to be completed using

the responses to the "manner" and "result" components of the record which appear on the back of page 7 of the Occupant Form. The "other" response for "result" is to be used, for example, when the investigator finds the address or phone number on the police report was fabricated. If multiple interviews are accomplished as a result of a single successful contact, document the number of attempts for one person and a single success for all other persons (e.g., four attempts to contact a number of people at a single location or phone, the first three are unsuccessful but on the fourth all four interviews required are obtained - surrogate or same person - document four contacts for one person and only one for the other three.)

If the official medical injury data is requested but not received at the time of the case submission the investigator should complete an Occupant Form Update Record for this Occupant.

Collision Diagram Log

A collision diagram log should be filled out for each accident investigated.

5.0 SUBMISSION INSTRUCTIONS

5.1 Quality Control Checks for PSU Teams

Please find below a list of quality control checks to be made by the PSU teams.

5.1.1 Mandatory Variables and Consistency Checks

Check all mandatory variables before data are entered via the RDE system to make sure variable responses are filled in and are not outside the proper range.

Case rejection consistency checks comprise those checks which must be satisfied before the accident case can be accepted into the data file. These rejection checks are made in conjunction with a series of mandatory variables (variables which must be filled in on every case submitted). Each data collection instrument has several mandatory variables. These variables must be entered into the RDE system before the case will be accepted. The header variables make up the first five mandatory variables on each form. Acceptable ranges for the header variables are:

Primary Sampling Unit Number	01 - 10
Case Number	001A - 500N
Record Number	1 - 5
Transaction Code	1, 2, 3
Version Number	2

The remaining mandatory variables and acceptable ranges for each form are as follows:

Accident Form

Year of Accident	8, 9
Month of Accident	01 - 12
Stratification	A - N
First Harmful Event	01 - 04, 08, 09 11 - 13, 31 - 49, 51 - 53, 59, 61 - 64, 69
Number of Vehicle Forms Submitted	01 - 30
Number of Pedestrian & Nonmotorist Forms Submitted	00 - 26

Pedestrian & Nonmotorist

Pedestrian & Nonmotorist Number	01 - 26
---------------------------------	---------

Vehicle Form

Vehicle Number	01 - 30
Number of Occupant Forms Submitted	00 - 50

Driver Form

Vehicle Number	01 - 30
Driver Presence in Vehicle	1, 2

Occupant Form

Vehicle Number	01 - 30
Occupant Number	01 - 50

Before entering the data via the RDE system check for consistency between responses on mandatory variables and other specified variables. See below for the list of mandatory variable consistency checks.

ACCIDENT FORM

The number of vehicle forms submitted must equal the number coded for NUMBER OF VEHICLE FORMS SUBMITTED (A14).

The number of pedestrian & nonmotorist forms submitted must equal the number coded for NUMBER OF PEDESTRIAN & NONMOTORIST FORMS SUBMITTED (A15).

Each original submission must include:

- a) exactly one accident form and
- b) at least one vehicle form (i.e., a motor vehicle must be involved in the accident)

If the submission is a change or an update ensure that the following are true:

- a) it applies to a case already on file
- b) it does not apply to a mandatory variable.

*If the accident is classified in the pedestrian & nonmotorist stratum (A10 codes "A", "B", or "C") then the number coded on the accident form for NUMBER OF PEDESTRIAN & NONMOTORIST FORMS SUBMITTED (A15) must be one or more.

*If the accident is classified in the motorcycle stratum (A10 codes "D", "E", or "F") then at least one vehicle form must be submitted for a motorcycle (V13 = "41", "42", "48" or "49").

*If the accident is not classified in the pedestrian & nonmotorist stratum (A10 codes "D" thru "N") then the number coded on the accident form for NUMBER OF PEDESTRIAN & NONMOTORIST FORMS SUBMITTED (A15) must be "00".

*If an accident is classified in either the truck or other motor vehicle stratum (A10 codes "G" thru "N") then no motorcycle can be involved (the number coded on the vehicle forms for VEHICLE TYPE (V13) must not be "41", "42", "48", or "49").

*If an accident is classified in the other motor vehicle type stratum (A10 codes "K" thru "N") then no trucks can be involved in the accident (the number coded on the vehicle form for VEHICLE TYPE-V13 must not be "11", "12", "13", "14", "15", "16", "19", "21", "22", "23", or "29").

*May be exceptions if the police report is later judged to be incorrect. If these are noted as errors by the RDE System, they can be overridden.

If an accident is classified as having injuries of a fatal nature (A10 codes "A", "D", "G", or "K") then the number coded on the accident form for POLICE REPORTED ACCIDENT SEVERITY (A16) must be "1".

If an accident is classified as having injuries of an incapacitating nature (A10 codes "B", "E", "H", or "L") then the number coded on the accident form for POLICE REPORTED ACCIDENT SEVERITY (A16) must be "2".

If the accident is classified as a non-capacitating evident injury, possible injury, no injury, or unknown injury A10 "C", "F", "I", "J", "M", or "N" then the number coded on the accident form for POLICE REPORTED ACCIDENT SEVERITY (A16) must be "3", "4", "5", or "9".

If the first harmful event is a collision with a motor vehicle in transport (A12 codes "01" thru "04", or "08", or "09") then the number coded on the accident form for NUMBER OF VEHICLE FORMS SUBMITTED (A14) must be "02" or more.

If the first harmful event is a collision with a pedestrian nonmotorist (A12 codes "11", "12", or "13") the number coded on the accident form for NUMBER OF PEDESTRIAN & NONMOTORIST FORMS SUBMITTED (A15) must be "01" or more.

If the first harmful event is a collision with a pedestrian (A12 code "11") then one pedestrian & nonmotorist form must be submitted for the pedestrian (PEDESTRIAN OR NONMOTORIST'S TYPE P07 must be "01" at least once).

If the first harmful event is a collision with a pedacyclist (A12 code "12") then at least one pedestrian & nonmotorist form must be submitted for a pedacyclist where PEDESTRIAN OR NONMOTORIST'S TYPE P07 must be either "2" or "3" on at least one pedestrian & nonmotorist form).

If the first harmful event is a collision with other nonmotorist (A12 code "13") then at least one pedestrian & nonmotorist form must be filled out where the PEDESTRIAN OR NONMOTORIST'S TYPE P07 is either "Animal related," "Other," or "Unknown" (P07 must be "4", "5", or "9" at least once).

If the first harmful event is a non-collision/fire or explosion (A12 code "62") then the number coded on at least one vehicle form for FIRE OCCURRENCE (V38) must be "2" thru "6".

If the first harmful event is a collision where a trailer is disconnected in transport (A12 code "52"), then the number coded on at least one vehicle form for TOWED TRAILING UNIT (V14) must be "2" thru "6" or "7".

PEDESTRIAN & NONMOTORIST FORM

*If the accident is classified in the pedestrian & nonmotorist stratum (A10 "A", "B", or "C") then the PEDESTRIAN OR NONMOTORIST'S NUMBER (P06) on the pedestrian & nonmotorist form(s) submitted must be sequentially numbered beginning with "01".

VEHICLE FORM

For each accident, the VEHICLE NUMBER (V06) coded on the vehicle form(s) must be sequentially numbered beginning with "01".

For each vehicle in an accident there must be exactly one driver form with the same VEHICLE NUMBER (V06 and D06 are the same).

The number of occupant forms submitted must equal the number coded for NUMBER OF OCCUPANT FORMS SUBMITTED (V07).

DRIVER FORM

For each vehicle, if the associated driver form is coded "no" for DRIVER PRESENCE IN VEHICLE (D08 code "2") then there must be no occupant forms with OCCUPANT'S ROLE coded as driver (O12 code "1") for that vehicle.

For each vehicle if the associated driver form is coded "yes" for DRIVER PRESENCE IN VEHICLE (D08 code "1") then

a) there must be exactly one occupant form with OCCUPANT'S ROLE coded as driver (O12 code "1") for that vehicle;

or

b) there must be no occupant forms with OCCUPANT'S ROLE coded as driver (O12 code "1") for that vehicle and at least one occupant form with OCCUPANT'S ROLE coded as unknown (O12 code "9").

OCCUPANT FORM

For each vehicle, the number coded on the occupant form for OCCUPANT NUMBER (O07) must be sequentially numbered beginning with "01".

*May be exceptions if the police report is later judged to be incorrect. If these are noted as errors by the RDE system they can be overridden.

Please find below some other suggested areas where incorrect coding/reporting is likely to occur.

- Make sure 8s and 98s are coded after last reported injury (applies to variables P21 - P62 on the pedestrian & nonmotorist form and O28 - O69 on the occupant form).

Check the police report to make sure drivers and other occupants are paired with the proper vehicle.

- Check to make sure that the coded data are properly and legibly entered in the data collection forms.

Make sure version #2 of the forms has been used.

Make sure the object contacted and CDC's on the vehicle forms (V15 thru V28) are filled in with actual values or 8's and 98's.

Make sure vehicle contact points are highlighted with yellow tape in photographs.

Have "+"s or "-"s been circled for V47 and V48 on the vehicle form?

- Complete check list before submitting case. See check list below:

- a) Are all official records and slides present?
- b) Check slides and official records to make sure they correspond to the case submitted (slides and police report shouldn't be placed next to each other because the police reports "bleed" on the slide folders).
- c) Have portions of update forms been filled out where needed?
- d) Do the control charts properly reflect how much of the case report has been completed?
- e) Make sure case reports are properly sanitized.
- f) Are all data collection forms present?
- g) Are missing cases included?
- h) Make sure case materials are sequenced properly and the case report envelope stamped and properly identified.

5.1.2 Check to Make Sure Administrative Procedures
are Being Followed

- Are control charts and activity logs updated weekly?
- Are monthly reports sent in to both the Zone Center and NHTSA (team manager)?
- Are manuals up to date and properly displayed?
- Are needed supplies in stock (e.g., film, data, collection forms, other)?

5.1.3 Check Sampling Procedures

- Periodically review sampling procedures in team meeting.
- Document any problems in monthly report.

5.1.4 Check Data Collection Procedures

- Periodically review procedures. Document when meetings are held and any problems discovered with the data collection procedures or forms. Indicate problems in monthly report or over informatics to #01.

5.1.5 Check to Make Sure RDE Updates Are Being Made Properly

- Check transaction code.
- Make sure no changes are made to mandatory variables.
- Make sure change applies to a case on file.
- Check to make sure control charts are updated.

5.1.6 Check Individual Effort and Accuracy in Collecting
Evidence and Skill in Interpretation

- Discuss data collection procedures and efficient ways to execute them in team meeting. Discuss how much follow-up effort is needed for obtaining interviews and think about methods other than the phone and personal contact for obtaining more interviews (e.g., letters).

5.2 Case Submission

Cases acquired shall be submitted to the zone centers on a biweekly basis, beginning 19 January 1979. The materials for each case are to be in order in the recommended format discussed above, and each case is to be packaged in a separate

envelope with the appropriate identification and account of contents on the front of the envelope. These procedures will provide uniformity across teams and, in turn, reduce the variation encountered by the zone center upon receipt of the cases. Furthermore, the biweekly submission will minimize batch receipt of cases over longer intervals which tend to make the review process less efficient.

Submission Schedule

Cases shall be submitted on a biweekly basis beginning 19 January 1979 according to the schedule (Table 5-1). Essentially there will be one month following the month in which the case is sampled to make the initial submission of any cases in that month. This means the time available to initially submit a case will range from approximately one to two months, with an average of some 45 days. Interviews, vehicle inspections, and scenes not completed in the allowed time period will not be updated.

Those variables which are allowed updates, but have not been completed within the time available for the initial case submission, should be documented on the appropriate update record and submitted as updates in accordance with the schedule.

Cases which are completed (i.e., no updates needed) prior to elapsing of the available time period, should be submitted at the appropriate submission dates.

Case Envelopes

Each case is to be submitted in a medium weight manila envelope, approximately 9 1/2 X 12 inches in size.

TABLE 5-1: NASS 1979 CASE SUBMISSION SCHEDULE

Dates Batches of Materials May Be Sent

<u>DATE</u>	<u>CASES TO BE SUBMITTED - the month refers to the month the accidents were sampled</u>
19 JAN 79	Any completed (i.e., no updates needed) from January
2 FEB 79	Any completed from January
16 FEB 79	Any completed from January or February
2 MAR 79	All remaining* from January Any completed from February
16 MAR 79	Any completed from February or March Any updates from January
6 APR 79	All remaining* from February Any completed from March Any updates from January-February
20 APR 79	Any completed from March Any updates from January-February
4 MAY 79	All remaining* from March Any completed from April Any updates from January-February
18 MAY 79	Any completed from April or May Any updates from January-March
1 JUN 79	All remaining* from April Any completed from May Any updates from January-March
15 JUN 79	Any completed from May or June Any updates from January-April
6 JUL 79	All remaining* from May Any completed from June Any updates from January-April
20 JUL 79	Any completed from June or July Any updates from January-May

* All outstanding cases for this month must be submitted at this time. If necessary, complete any appropriate update records for subsequent update submission.

<u>DATE</u>	<u>CASES TO BE SUBMITTED - the month refers to the month the accidents were sampled</u>
3 AUG 79	<i>All remaining* from June</i> Any completed from July Any updates from January-May
17 AUG 79	Any completed from July or August Any updates from January-June
7 SEP 79	<i>All remaining* from July</i> Any completed from August Any updates from January-June
21 SEP 79	Any completed from August or September Any updates from January-July
5 OCT 79	<i>All remaining* from August</i> Any completed from September Any updates from January-July
19 OCT 79	Any completed from September or October Any updates from January-August
2 NOV 79	<i>All remaining* from September</i> Any completed from October Any updates from January-August
16 NOV 79	Any completed from October or November Any updates from January-September
7 DEC 79	<i>All remaining* from October</i> Any completed from November Any updates from January-September
21 DEC 79	Any completed from November or December Any updates from January-October
4 JAN 80	<i>All remaining* from November</i> Any completed from December Any updates from January-October

* All outstanding cases for this month must be submitted at this time. If necessary, complete any appropriate update records for subsequent update submission.

The PSU number, case number, account of case materials, and the status of the case at the time of submission are to be entered in the upper right hand corner of the envelope as shown below.

PSU # ___ CASE # ___

CASE COMPLETE CASE TO BE UPDATED

FORMS: Police _____

	<u>Required</u>	<u>Included</u>
Accident.....	___	___
Collision Diagram.....	___	___
Non-Occupant.....	___	___
Vehicle.....	___	___
Driver.....	___	___
Occupants.....	___	___
Medicals.....	___	___
CRASH.....	___	___
Slides (Number).....	___	___

A rubber stamp, ink pad, and ink have been provided. This information will help the zone center effectively sort the case at the inception of the quality control process, and the standardized envelopes will facilitate storage and retrieval.

Case update records should be submitted in the same type of envelope. Identify the PSU and boldly mark the front of the envelope: UPDATES. The updates will be removed from the envelope and collated with the original forms in their respective cases by the Zone Center.

Shipment of Cases

The envelopes containing the individual cases which are eligible for shipment according to the schedule shown in Table 5-1 should be packaged in a box or other suitable container and mailed to the zone center. The PSU should provide

an acknowledgement of delivery card, return receipt, or similar confirmation to insure the shipment was received by the Zone Center.

The mailing addresses for the Northern and Southern Zone Centers are as follows:

North: Mr. John W. Garrett
Program Manager, Accident Studies
Transportation Research Department
Calspan Corporation
P.O. Box 235
Buffalo, New York 14221

South: Institute for Research in Public Safety
ATTN: NASS Receiving
400 East Seventh Street, Room 532
Bloomington, Indiana 47405

5.3 Remote Data Entry

Section to be added.

6.0 CODING INSTRUCTIONS

This section provides the general instructions for collecting and coding the data called for in the field forms. Documentation for each data element includes variable name, element values (attributes), definitions where needed, data sources, collection methodology, reference materials (if needed), remarks, consistency checks, and special processing information.

Variable Name: Primary Sampling Unit

Format: 2 column - numeric

Beginning
Column 01

Element Values:

01
02
03
04
05
06
07
08
09
10

For the interpretation of these data element values, please refer to the NASS Analytical User's Manual: 1979 File, Appendix C.

Variable Name: Case Number

Format: 4 column alphanumeric

Beginning
Column

3

Element Values:

Range: 001A-N through 500A-N

Remarks:

The case number is composed of two parts: the first three digits are a consecutive number assigned by the team ranging from 001 to 500; the second part is the letter of the column in which it is categorized on the Stratification Listing Sheet (A-N).

No consecutive numbers should be skipped. If a case must be deleted the number should not be reused. The letter must correspond to the letter coded in column 16 of the Accident Form.

Variable A04 (p. 73) is deleted in this edition.

ACCIDENT FORM

A06

Variable Name: Year of Accident

Format: 1 column - numeric

Beginning
Column 10

Element Values:

8 = 1978

9 = 1979

Remarks:

Self-explanatory.

Variable Name: Month of Accident

Format: 2 columns - numeric

Beginning
Column 11

Element Values:

01	January	07	July
02	February	08	August
03	March	09	September
04	April	10	October
05	May	11	November
06	June	12	December

Remarks:

Self-explanatory.

Variable Name: Day of Week

Format: 1 column - numeric

Beginning
Column 13

Element Values:

1	Sunday	5	Thursday
2	Monday	6	Friday
3	Tuesday	7	Saturday
4	Wednesday	9	Unknown

Remarks:

Self-explanatory.

Variables A09, A10 and A11 (pp. 77-83) are deleted in this edition.

Variable Name: First Harmful Event

Format: 2 columns - numeric

Beginning
Column 22

Element Values:

Collision with Motor Vehicle in Transport	38	Culvert, railroad tracks, curb
01 Head-on	39	Abutment, retaining wall, bridge support
02 Rear-end	40	Embankment
03 Angle	41	Building, rigid
04 Sideswipe, endswipe, and very narrow impact frontal	42	Building, framed
08 Other collision type (specify)	43	Bridge rail
09 Unknown collision type	44	Guard rail
Collision with Pedestrian or Nonmotorist	45	Impact attenuator
11 Pedestrian	46	Ground
12 Pedacyclist	47	Median barrier
13 Other nonmotorist (specify)	48	Train
Collision with Stationary Object	49	Other stationary objects (specify)
31 Motor vehicle not in transport	Collision with Nonstationary Object	51 Animal
32 Tree (up to 50 cm circumference)	52 Trailer, disconnected in transport	52 Trailer, disconnected in transport
33 Tree (over 50 cm circumference)	53 Train	53 Train
34 Pole - fixed	59 Other nonstationary objects (specify)	59 Other nonstationary objects (specify)
35 Pole - breakaway-- did break away	Non-Collision	61 Overturned
36 Pole - breakaway-- did not break away	62 Fire or Explosion	62 Fire or Explosion
37 Movable objects (post, fence, mail box, delineator, etc.)	63 Jackknifed	63 Jackknifed
	64 Immersion	64 Immersion
	69 Other non-collision (specify)	69 Other non-collision (specify)

Remarks:

Definition: D16.1-1976, sections 2.3.1 through 2.3.6, pages 8-9.

Every motor vehicle traffic accident consists of a series of events. In classification by type, one of the events must be selected before further classification can be made. For uniformity in classification, the "First Harmful Event" is the first property or injury producing event that can be determined to have happened in the accident.

Variable: First Harmful Event (cont'd.)

The basis of this classification is the information acquired (scene inspection, interview, etc.) during the MASS investigation. Police reports may prove helpful in selecting the appropriate code, but are not the sole determinant for the code (i.e., the investigator may select a code which is different from the one based on the police report, given the discovery of additional data).

Since some motor vehicles (trucks over 8,500 lbs. GVW, motorcycles, etc.) will not have their damage described using the Collision Deformation Classification (CDC), J224a, the investigator should still make note of the principal direction of force (PDOF) and the area of the vehicle which sustained the damage to classify the accident.

Code "01" (Head-on) refers to a collision where the primary direction of force for both of the two motor vehicles in transport must be 11-1 o'clock with front-to-front contact.

Code "02" (Rear-end) refers to a collision where the primary direction of force for one of the two motor vehicles in transport must be 3-9 o'clock with rear contact.

Code "03" (Angle) refers to a collision where the primary direction of force for the two motor vehicles in transport must be 9-3 and 9, 10, 2 or 3 front to front; 12-6 or 6-12 o'clock front-to-side or side-to-side.

Code "04" (sideswipe, endswipe and very narrow impact frontal) refers to a collision where the primary direction of force for the two motor vehicles in transport and the overlap between them is such that there is minimal side (sideswipe) or frontal (endswipe) engagement of the two vehicles travelling in the same or opposing or orthogonal directions. The resulting damage is primarily restricted to sheet metal involvement with no significant structural engagement; i.e., no frame or A, B, C, D, etc. pillar engagement which halts the sideswipe. This also applies to both front and rear endswipes. (Note: see examples at end of variable for further clarification.

Code "08" (Other collision type) refers to a collision between two motor vehicles in transport which cannot be classified in one of the above codes; it is not likely to be used frequently. An example is a collision between a vehicle in transport which vaults or free falls from one roadway and lands upon a vehicle in transport on another roadway.

Variable: First Harmful Event (cont'd.)

Code "09" (Unknown collision type) refers to a collision where the primary direction of force for the two motor vehicles in transport is not known.

Vehicles which are inappropriately parked (not in a parking lane or protruding into the roadway even though "parked" in the parking lane) are to be considered in transport and should be coded "01-09". This includes vehicles which straddle the roadway (not road) and shoulder/sidewalk in any manner. These vehicles require both Vehicle and Driver Forms even if unoccupied. Vehicles which are facing the wrong way but are within a parking lane are not inappropriately parked. They are to be coded "31" (A13 is coded "1") and require neither Vehicle nor Driver Forms; collect only the data requested at the end of the CRASH Program Summary.

Code "11" (Pedestrian) refers to any person who is on a trafficway or on a sidewalk or path contiguous with a trafficway, and who is not in or on a nonmotorist conveyance. A nonmotorist conveyance is defined as any human-powered device by which a nonmotorist may move, or by which a pedestrian or nonmotorist may move another nonmotorist, other than by pedaling. A nonmotorist conveyance includes the following: baby carriage, coaster wagon, ice skates, roller skates, push cart, scooter, skate board, skis, sled, wheel chair, rickshaw, etc. Excluded are pedacyclists.

Code "12" (Pedacyclist) Refers to any occupant of a Pedacycle. See D16.1-1976, section 2.2.16, page 6.

Code "13" (Other Nonmotorist) refers to a person who is not a pedestrian or a pedacyclist.

Code "31" (Motor vehicle not in transport) refers to a motor vehicle which is not on the roadway and not in motion (e.g., vehicle located in parking lane).

For codes "32" and "33" measure the circumference of the tree on the horizontal plane at the point of impact. Note: a circumference of 50 cm. is approximately equivalent to 19 inches.

Code "34" (Pole - fixed) refers to poles which are not designed to "break away" and reduce the decelerative forces experienced by the vehicle.

Codes "35" (Pole - breakaway--did break away) and "36" (Pole - breakaway--did not break away) refer to poles which are designed to "break away" and reduce the deceleration force experienced by the vehicle. Common types include: slip base (steel); frangible base (cast aluminum); and progressive shear (galvanized steel or stainless steel).

Variable: First Harmful Event (cont'd.)

Code "45" (Impact attenuator) refers to impact attenuators which are barriers placed in front of fixed objects on the highway to absorb energy, and to thus mitigate the injury effects of collisions at such sites. A number of the common devices are described and illustrated on the following pages. Other impact attenuating devices may be encountered; therefore, the investigator should be sure to photograph them for verification when uncertain.

Code "46" (Ground) refers to an impact with the ground. This is not to be used when the first property or injury producing event results from a rollover (Code "61"). Collisions which may be classified using this code include (but are not limited to) vehicles which sustain under carriage damage by straddling the pavement and shoulder and impacting a prominent pavement lip, or freefalls or vaults from the road surface to the ground without excessive roll action prior to impact. This includes uncontrolled motorcycles which contact the ground first. For these motorcycle accidents code V08 as "1" and V39 as "12".

Code "47" (Median barrier) refers to physical barriers which divide trafficways. Commonly encountered types are illustrated following the impact attenuation illustrations. Other median barriers may be encountered; therefore, the investigator should be sure to photograph them for verification when uncertain.

Code "61" (Overturned) does not include uncontrolled motorcycles which contact the ground ("46"), other objects ("31-45," "47-49"), vehicles ("01-09"), or pedestrians or nonmotorists ("11-13").

Code "69" (Other non-collision) may be used when a vehicle sets an object in motion that strikes or is struck by a vehicle. Examples include dislodged cargo, spewed gravel, etc. It may be used in other situations subject to consultation with the Zone Centers.

MAPPING OF FIRST HARMFUL EVENT TO MOST SEVERE IMPACT

FIRST HARMFUL EVENT (A12)

Head-on:

One (11,12,01) F *
Other (11,12,01)F *

Rear:

One (03,04,05,06,07,08,09)B *
Other

Angle:

One (09,10,11,12,01,02,03)F *
Other (09,10,02,03) F *

OR

One (06,07,08,09,10,11,12)L *
Other (F,L,R) *

MOST SEVERE IMPACT (VJ9)

Head-on:

This (11,12,01) F *
Other (11,12,01)F *

Rear-Striking:

This *
Other (03,04,05,06,07,08,09)B *

Rear-Struck:

This (03,04,05,06,07,08,09)B *
Other

Angle-Striking:

This (09,10,11,12,01,02,03)F *
Other (09,10,02,03) F *

OR

This (09,10,02,03) F *
Other (09,10,11,12,01,02,03)F *

OR

This (10,11,12,01,02) (F,L,R) *
Other (L,R) *

Angle-Struck - Left Side:

This (06,07,08,09,10,11,12)L *
Other (F,L,R) *

MAPPING OF FIRST HARMFUL EVENT TO MOST SEVERE IMPACT (cont.)

FIRST HARMFUL EVENT (A12)

MOST SEVERE IMPACT (V39)

OR

One (12,01,02,03,04,05,06)R *
 Other (F,L,R) - * -

Angle-Struck - Right Side
 This (12,01,02,03,04,05,06)R *
 Other (F,L,R) - * -

Side-Endswipe/narrow Frontal
Narrow Frontal

One F (E+)
 Other F (E,S)

Side-Endswipe/narrow Frontal
Narrow Frontal

One F (E+)
 Other F (E,S)

Side-Endswipe

One (F,L,R,B) S
 Other - - - -

Side-Endswipe

One (F,L,R,B) S
 Other - - - -

"*" Excludes all sideswipes, endswipes (S) and those narrow frontals which are to be coded under Side-Endswipe/Narrow Frontal.

"+" Includes only those frontal impacts which have an 'E' in this column if the following conditions are met: (1) both vehicles must have CDC's which are F (E,S) and (2) the masses of the vehicles acting in opposition to each other have little effect because of the "sideswiping" action. In other words, this modification allows the analyst to segregate those collisions in which both the vehicles have 11-1 o'clock force directions with front-to-front contact but which are of a sideswiping variety from those which have the same force directions and frontal plane damage but are of a more severe nature.

Fitch Inertial Barrier - This barrier consists of plastic barrels in which the upper portion is filled with sand. The barrels are clustered at the highway hazard as shown in Figure 1 and, on impact, vehicle energy is attenuated by displacement of sand.

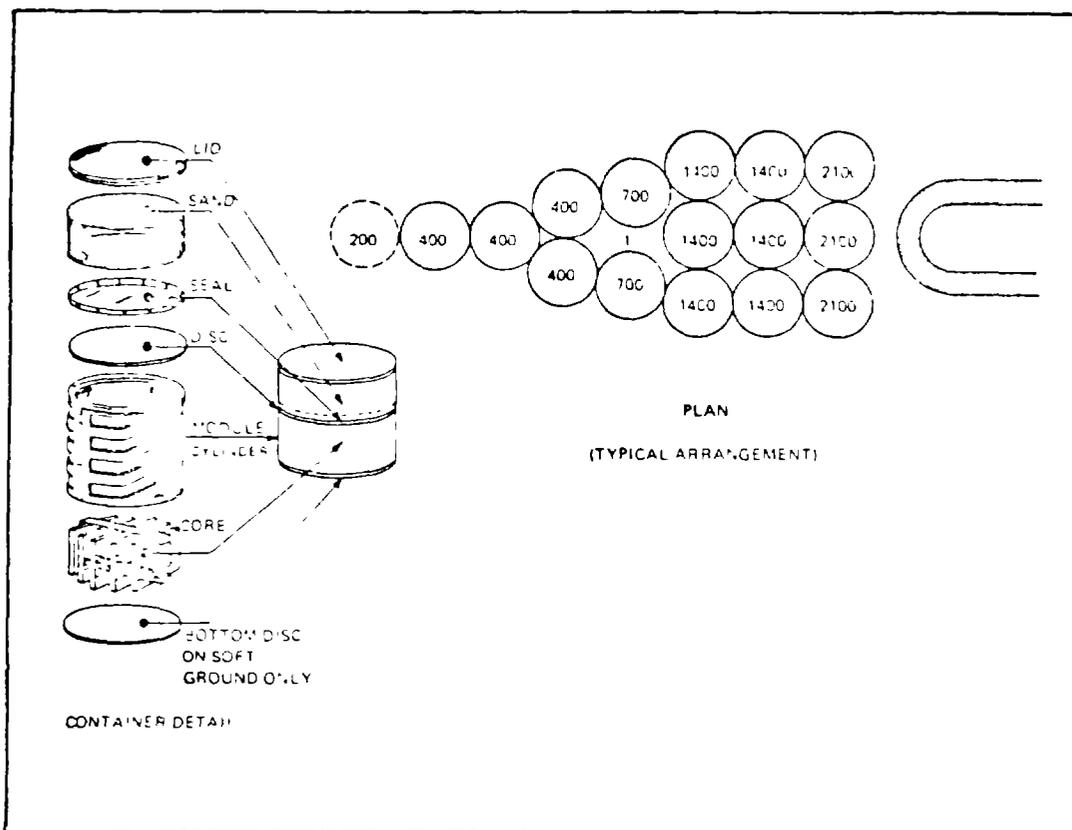


FIGURE 1

Torshok Barrier - This barrier consists of a U-shaped (in overhead view) arrangement of protective tubular railing surrounding axially loaded cylinders supported from the highway hazard. Energy absorption is achieved through the compression of the axially loaded cylinders and energy attenuation through the deformation of a steel torus placed between the cylinders (Figure 2).

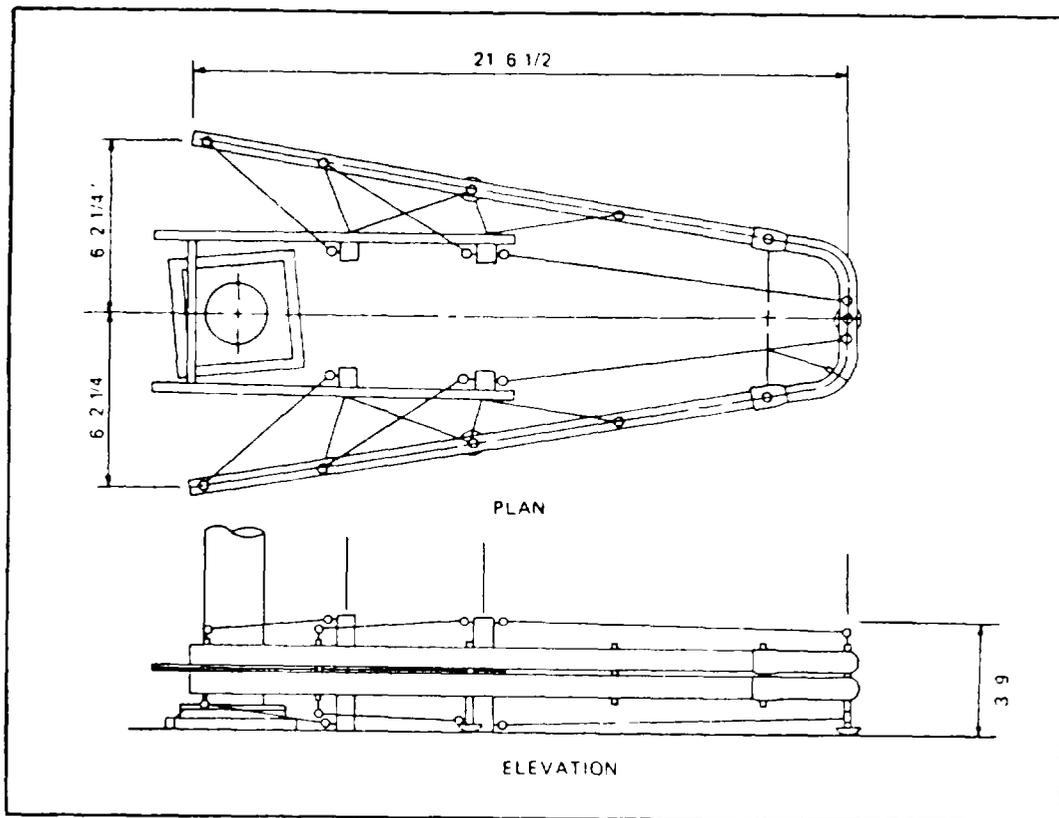


FIGURE 2

Hi-DRO Cushion Crash Barrier - This system consists of plastic cylinders filled with water which are grouped in modular clusters. Energy attenuation is achieved by forcing water out of the plastic cylinders (Figure 3). Overlapping fender (contact) panels are provided as a contact surface and for vehicle guidance.

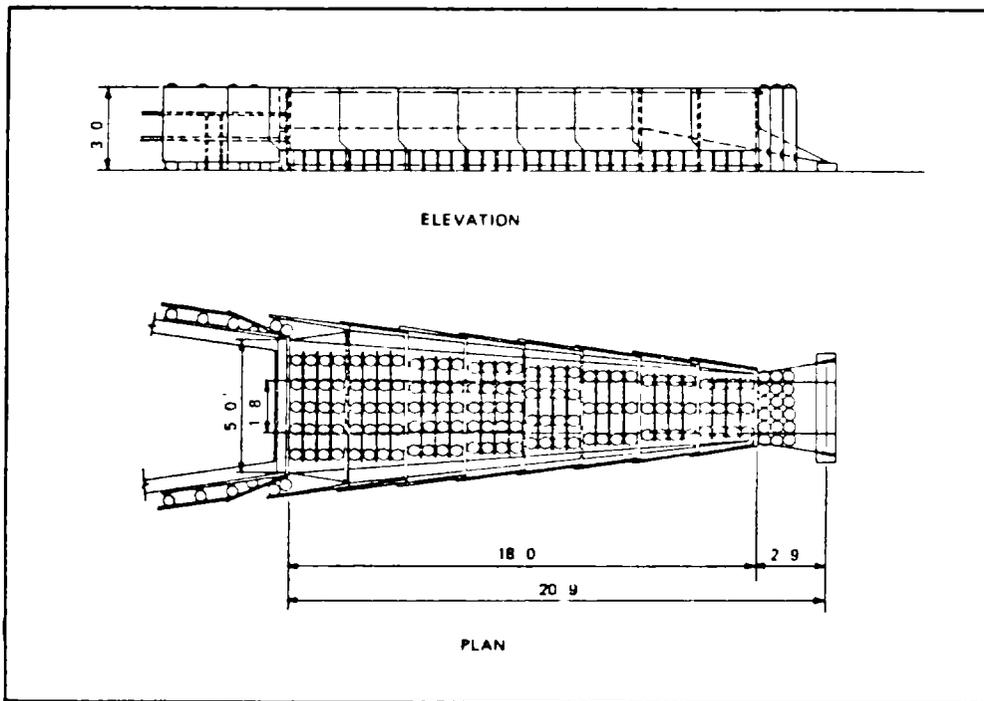


FIGURE 3

Modular Crash Cushion (Steel Drum) - This barrier consists of modular clusters of 55 gallon steel drums at a highway hazard site. Fender panels are provided, and energy attenuation is achieved by successive crushing of the drums upon impact (Figure 4).

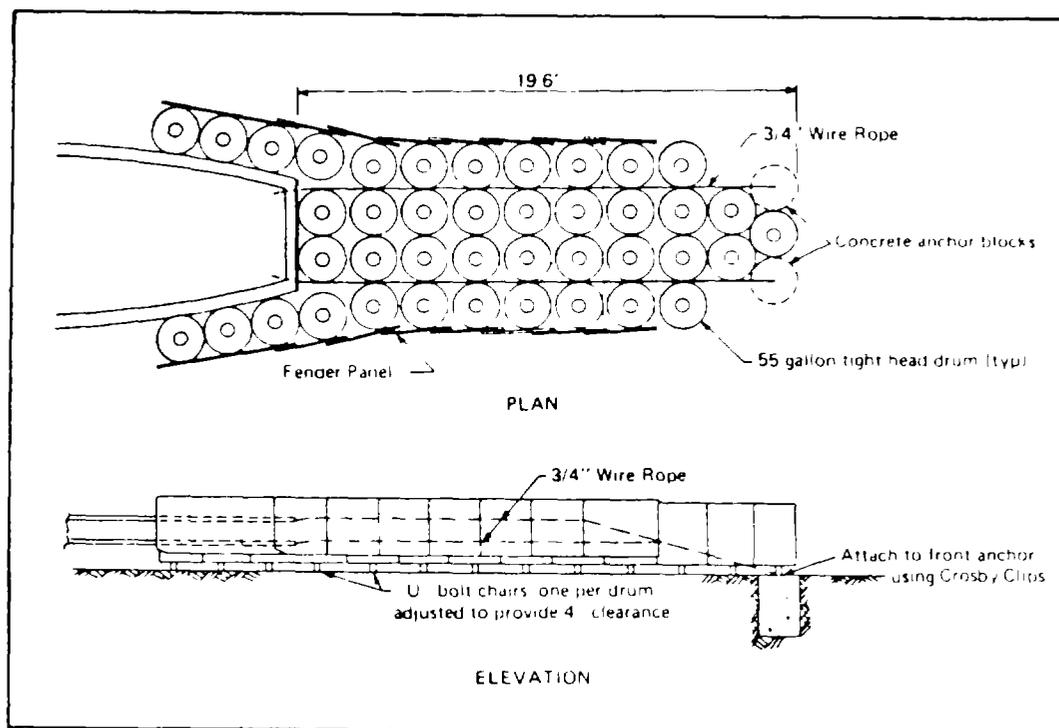


FIGURE 4

Vermiculite Concrete Barrier - This barrier consists of a grouping of light-weight cellular concrete modules at the highway hazard site. Energy attenuation is achieved through successive crushing of these concrete modules. Fender panels may also be present (Figure 5).

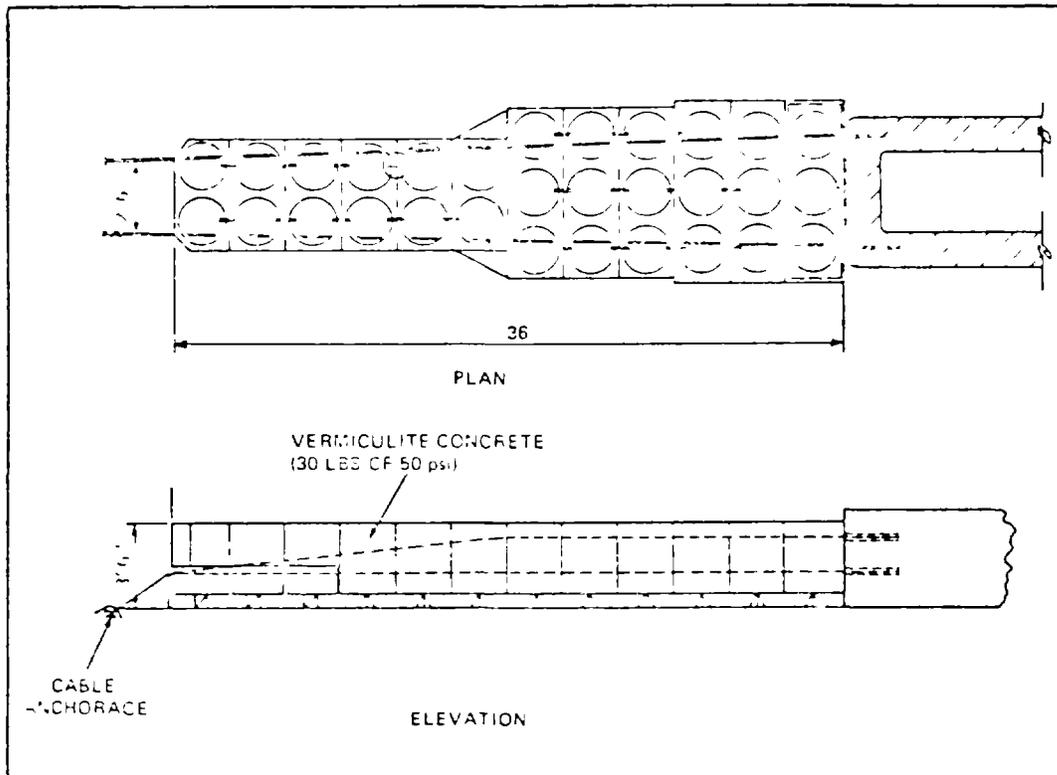


FIGURE 5

Van Zelm Dragnet System - This barrier consists of a net device for vehicle contact which is attached to a steel tape. Each end of the tape is, in turn, run through a Metal Bender which exerts a constant restraining force on the tape as it is pulled through the device, thus, arresting vehicle progress (Figure 6)

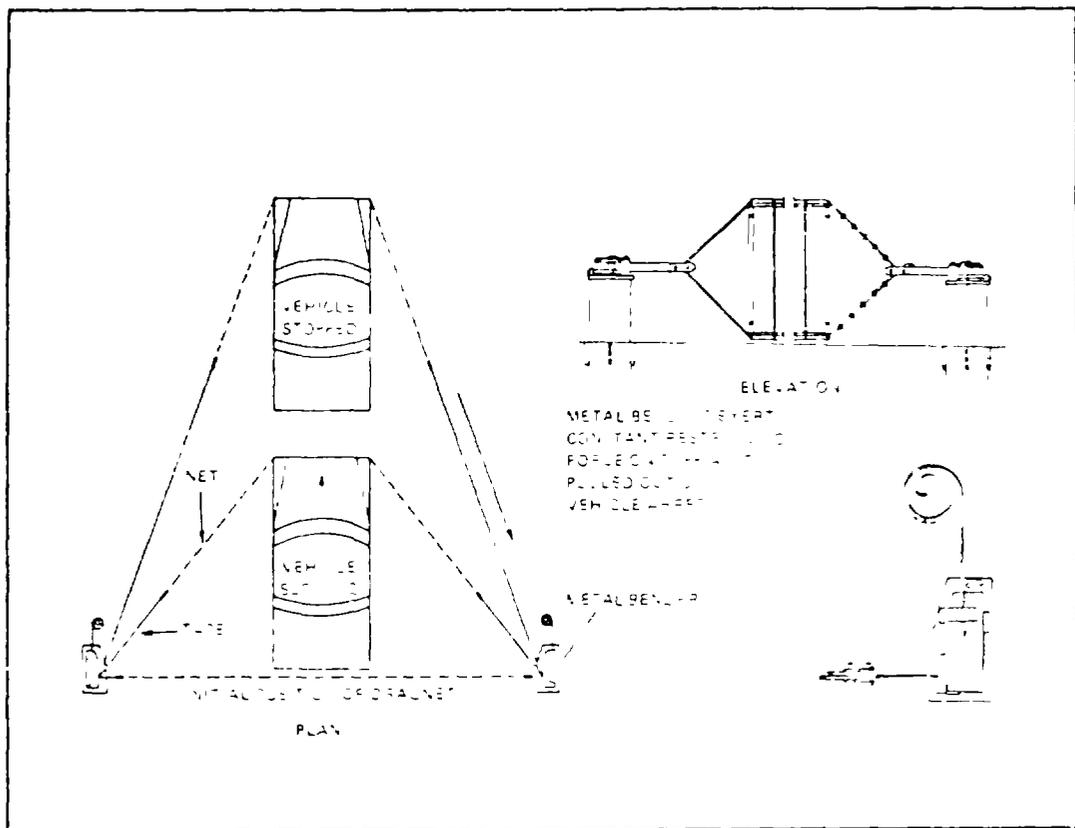


FIGURE 6

Goodyear Automobile Tire Cushion - This barrier consists of long runs of discarded tires which are joined together at a highway hazard site. Energy attenuation is achieved by successive collapse of the tires upon impact (Figure 7).

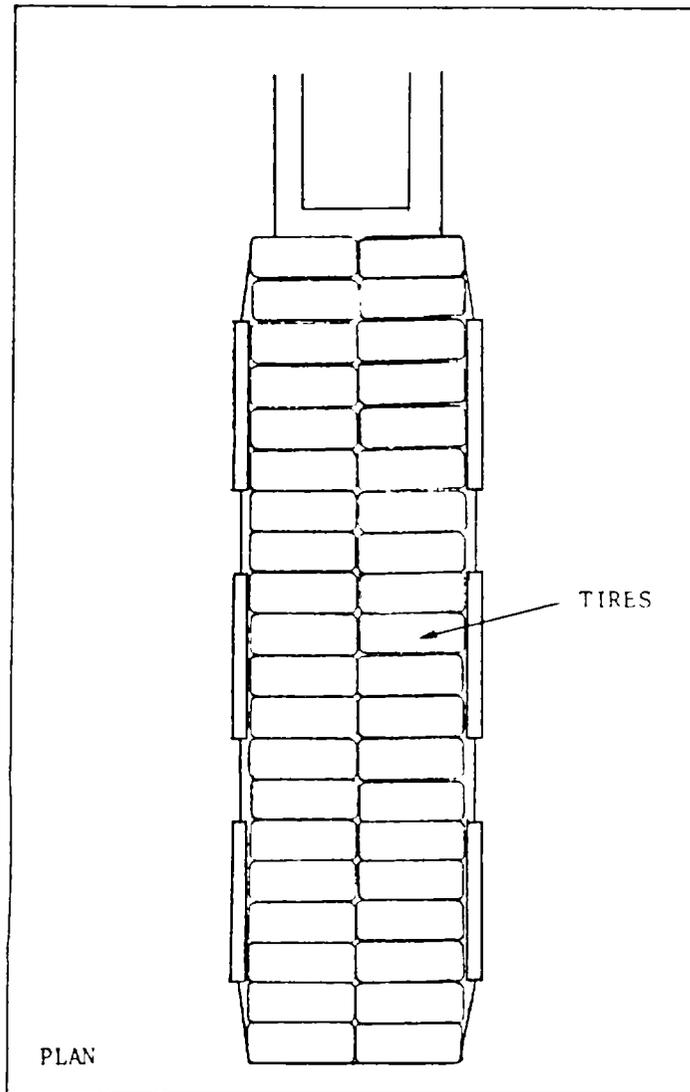
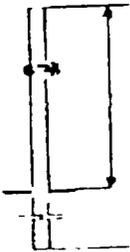
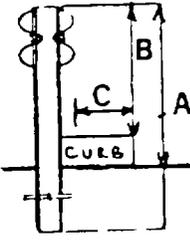
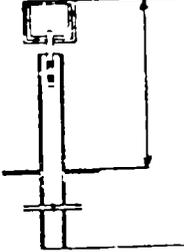
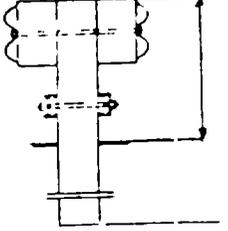
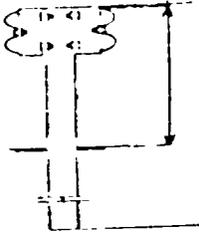
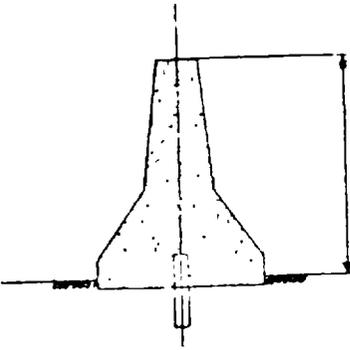
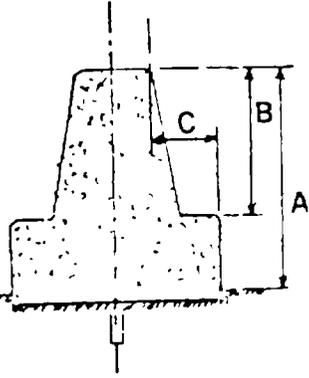


FIGURE 7

COMMON TYPES OF MEDIAN BARRIERS

			
<p align="center">MB1 CABLE 1</p>	<p align="center">MB2 "W" BEAM 2</p>	<p align="center">MB3 BOX BEAM 3</p>	<p align="center">MB4w BLOCKED-OUT "W" BEAM (Wood Post) 4</p>
			
<p align="center">MB4S BLOCKED-OUT "W" BEAM (Steel Post) 5</p>	<p align="center">CONCRETE BARRIER 6</p>	<p align="center">CONCRETE BARRIER 7</p>	

Variable Name: Relation to Roadway (location of first harmful event)

Format: 1 column - numeric

Beginning
Column 24

Element Values:

- 1 On roadway
- 2 On shoulder
- 3 In median
- 4 On roadside
- 5 Outside right-of-way
- 6 Off roadway - location unknown
- 7 In parking lane
- 9 Unknown

Remarks:

Code "1" (on roadway) refers to that part of the roadway designated, improved and ordinarily used for motor vehicle travel. Definition: D16.1-1976, page 6.

Code "1" if vehicle strikes a curb which is not contiguous with a parking lane at the location of the impact. Also, it may be used when vehicle in transport is almost entirely in the roadway when it impacts another vehicle or object located in a parking lane (e.g., roadway side of parked vehicle in designated implicit or explicit parallel parking lane is struck).

Code "2" (on shoulder) refers to that part of a trafficway contiguous with the roadway for emergency use, for accommodation of stopped vehicles, and for lateral support of the roadway structure. Definition: D16.1-1976, pages 6-7.

Code "4" refers to a location off the road, but inside the right-of-way (Definition D16.1-1976, page 7. 2.2.19).

Code "6" refers to a location off the roadway, but its relationship to the right-of-way is not known.

Code "7" may be used when a vehicle strikes a curb which is contiguous with a parking lane at the location of the impact. Also, it is used when the vehicle in transport enters a designated parking lane area on the road prior to impacting another vehicle or object in that same area (e.g., rear-end collision with parked vehicle in designated implicit or explicit parallel parking lane). If the collision occurs on the road in a designated parking area but nonparallel, e.g., angular parking, then this code should be used.

Variable Name: Number of Vehicle Forms Submitted

Format: 2 columns - numeric

Beginning
Column 25

Element Values:

Range: 01 through 30.

Remarks:

Each accident must have at least one vehicle form submitted. For every vehicle form there must be one driver form. The value recorded must equal the number of vehicle forms present in the case.

ACCIDENT FORM

A15

Variable Name: Number of Pedestrian and Nonmotorist
Forms Submitted

Format: 2 columns - numeric

Beginning
Column 27

Element Values:

Range: 00 through 26.

Remarks:

If any pedestrian or nonmotorist was present in the accident, then the accident (A10) must be classified as a pedestrian and nonmotorist accident. The value recorded must equal the number of pedestrians and/or nonmotorists for which a form was submitted.

Variable Name: Police Reported Accident Severity

Format: 1 column - numeric

Beginning
Column 29

Element Values:

- 1 K - Killed
- 2 A - Incapacitating injury
- 3 B - Nonincapacitating injury
- 4 C - Possible injury
- 5 O - No injury
- 9 Unknown

Remarks:

Select the numeric code which represents the most severely injured person: occupant, pedestrian, or nonmotorist, or the police report.

If the police report contains a detailed description of the injuries but does not translate the injuries into the KABCO codes, use the police method for doing so. For example, injuries which are considered to be of an incapacitating nature are classified as "A" (Code "2"); nonincapacitating evident injuries are "B" (Code "3"), and; possible injuries are "C" (Code "4"). Property damage only is classified as "O" (Code "5").

Variable Name: Involvement of Hit & Run in Accident

Format: 1 column - numeric

Beginning
Column 30

Element Values:

- 1 No
- 2 Yes
- 9 Unknown

Remarks:

The involvement of hit and run in an accident occurs when a motor vehicle contacts a person, object, or another motor vehicle causing either personal injury to a person (inside or outside of the vehicle) or property damage to the object or to a motor vehicle.

It does not matter whether the hit and run vehicle was striking or was struck. The hit and run vehicle(s) is (are) the one (or ones) that left the scene prior to investigation by the police, or that vehicle which is abandoned at the scene when its occupant(s) flee(s) from the area.

The primary source is the police report. Code "2" (yes) should be used if the report indicates that the vehicle was involved in a collision which they investigated, but they have little or no information on that vehicle because of its departure prior to their investigation.

For sampling purposes (A10), if the type of vehicle is unknown, (V13=99) then assume that the hit and run vehicle was an "other motor vehicle." If it is known from the police report that the vehicle is a "truck" or "motorcycle" then treat it accordingly for sampling.

Code "2" can also be used if it is alleged by one of the involved parties that another vehicle, not reported by the police, was involved in the accident. However, the allegation must be supported by statements to this effect from an unbiased witness or from the existing physical evidence. An unsupported claim by one of the parties that a hit and run vehicle was involved should be coded as no ("1").

When the presence of a hit and run vehicle is indicated (A17 = 2), the NASS investigator should include Vehicle and Driver Forms for each such vehicle. If the vehicle was known or assumed to have been in transport at the time

Variable: Involvement of Hit & Run in Accident (cont'd.)

of the accident at least one Occupant Form should be completed. If it is known from a reliable source the number of occupants or nonmotorists (left scene but was not in transport at time of impact) in the vehicle at the time of its involvement, then submit the appropriate number of forms (Occupant or Pedestrian and Nonmotorist). Although most of the variables on the forms will have element values which are unknown, the forms are necessary to document the presence of the vehicle(s) and its person(s).

If the police report the presence of a hit-and-run vehicle but the NASS investigator learns during the investigation that the allegation of the involvement of a hit-and-run vehicle was fabricated, then any information about the vehicle can be dropped. Caution must be used in this instance. The dropping of a police reported vehicle must be based on an admission or upon reliable evidence collected. Suspicion of falsehood is not an acceptable justification.

Variable Name: Hour of Day

Format: 4 columns - numeric

Beginning
Column 31

Element Values:

Code reported military time of accident.

For example: 1200 noon
2400 midnight

9999 Unknown

Remarks:

Variable Name: Light Conditions

Format: 1 column - numeric

Beginning
Column 35

Element Values:

- 1 Daylight
- 2 Dark
- 3 Dark, but lighted
- 4 Dawn
- 5 Dusk
- 9 Unknown

Remarks:

The police report is to be used to determine the light conditions for the accident.

If the element values are different between the police report and the NASS form, translate the value for the police report into the appropriate NASS value.

If the police report indicates that it was dark only, having no response to indicate that it was dark, but lighted, the investigator may select the latter value if it is known that the scene was lighted.

If the police report does not indicate the light conditions, i.e., they fail to check any category, the investigator should select the most representative value when reasonably certain of what it might have been. However, the investigator, as a surrogate for the police in this example, should restrict the selection to "1", "2", or "3". In those cases where the police fail to indicate the condition and the investigator feels it might have been dusk or dawn (both being short, transitory light conditions), the investigator should code "9" (unknown).

If the police report has two or more responses for light conditions, the investigator should code unknown.

Variable Name: Atmospheric Conditions

Format: 1 column - numeric

Beginning
Column 36

Element Values:

- 1 Normal (no adverse atmospheric related driving conditions)
- 2 Raining
- 3 Sleetng
- 4 Snow falling
- 5 Fog
- 6 Other (e.g., smog, smoke, blowing sand or dust, severe crosswinds, etc.) (specify)
- 9 Unknown

Remarks:

The police report is to be used to determine the atmospheric conditions for the accident.

If the element values are different between the police report and the NASS form, translate the value for the police report into the appropriate NASS value.

If the police report does not indicate the atmospheric condition, i.e., they fail to check any category, the investigator should select the most representative value when reasonably certain of what it may have been. The investigator will have information regarding the road surface condition (which is different from the atmospheric condition) on the driver form, page 2. This may be helpful but not necessarily sufficient to select an element value. Additional information may be obtained by asking this as a specific question on the driver form, page 2. The investigator should attempt to resolve the differences between drivers, if possible. In those cases where the police fail to indicate the condition, conflict among drivers cannot be resolved, or no interview was obtained, the investigator should code "9" (unknown).

If the police report has two or more responses for atmospheric conditions, the investigator should code unknown.

Code "3" (sleetng) includes hailng.

Code "6" (other) should not be used solely because of cloudy or overcast skies. The element values for this variable are oriented toward precipitation, particle dispersion or severe crosswinds which may affect the driver's visual ability or the vehicle's controllability.

Variable Name: Area Type

Format: 1 column - numeric

Beginning
Column 37

Element Values:

- 1 Rural
- 2 Urban
- 9 Unknown

Remarks:

Federal Highway Administration classification obtainable from the State Highway Department must be used. No other classification is available.

Do not use the police report for selecting this element value.

When the area type cannot be determined from the TA-1 Classification map, contact the nearest FHWA office for their assistance. If FHWA is unable to assist, contact the nearest FARS representative since NASS is designed to be compatible with FARS on this issue. Refer problems in obtaining the FHWA classification to Contract Technicals Managers.

Definition: D16.1-1976, pages 12-13.

Accident Level Versus Traffic Unit Level

Environmental Data

There is a conceptual difference between the accident level and the traffic unit level environmental data. The accident level data is intended to represent the environment at the crash scene. In this sense one can say that the accident level environmental variables represent at-crash data. On the other hand the traffic unit level environmental variables are intended to provide the most representative description of the roadway environment that the driver (vehicle) had to cross just prior to the first harmful event. In this sense one can say that the traffic unit level environmental variables represent the environment just prior to crash.

When determining either the accident or traffic unit level environmental data the point of focus is at the location of the first harmful event. There are two mutually exclusive sets of locations that the first harmful event can occur in. They are: (1) in a junction (within the prolongation of the lines which form the boundary of the intersecting roadways) and (2) not in a junction. Recall that a junction is merely the intersection of two roadways. Further, the roadways can be either a highway, road, or street, or one or both of the roadways can be an alley or driveway. In the latter case there is a special rule for determining the accident level environment in a junction. Alleys and driveways can (in the vast majority of instances) be distinguished from highways, roads, and streets by the fact that the former are not named.

Any exceptions to this "named rule" for distinguishing streets or roads from alleys or driveways should be handled on a case by case basis.

Determine the location of the first harmful event and proceed as follows:

1. The location of the first harmful event is obscure.
 - (a) The police report depicts the accident as occurring in a junction. Upon review of the actual scene you are unsure as to whether or not the first harmful event actually did or did not occur within the prolongation of the lines forming the boundaries of the intersecting roadways; therefore, assume it did occur in a junction and proceed as if it did (i.e., follow the "in-a-junction" rules).
 - (b) The police report depicts the accident as occurring other than in a junction. Upon review of the actual scene you are unsure as to where the first harmful event actually occurred. Follow the "not-in-a-junction" rules. However, if you do determine from the scene and other evidence that the location of the first harmful event was in a junction, then follow the "in-a-junction" rules.
2. In-a-junction: First, determine the traffic unit level environmental variables for each in-transport vehicle. Go to the mouth of the roadway that brought that vehicle into the junction. In the case of a vehicle abandoned in a junction go to the mouth of the roadway that most likely brought the vehicle into the junction. First determine the roadway's TA-1 Classification (it is understood that this determination will have to occur most likely from a map in your office; however, this determination is conceptually first.) Next follow the guidelines presented for variable D30 (Number of Travel Lanes) and determine the total number of lanes for each vehicle's roadway (at the mouth). Finally, determine for each of

the remaining variables (D31-D41) for each vehicle the values that are most representative of the driver's (vehicle's) environment back along the vehicle's (driver's) path just prior to its involvement in the collision. The phrase "just prior" is purposely left vague since the decision rests with the investigator. However, the distance should only go so far as is needed to include those points of transition which are most representative of the environment. Your judgment will be evaluated on the basis of the reasonableness of your selections.

For the accident level environmental variables where multiple roadways were involved in the accident's first harmful event, select one according to the following rules:

- (a) Choose the roadway with the higher (lower numerically) TA-1 Classification. If the values are the same then proceed to rule (b). In either case record the value in variable A22.
- (b) Choose the roadway with the greater number of lanes (variable D30). If the number of lanes are the same, then proceed to rule (c).
- (c) Choose the roadway on which the most at-fault driver was travelling, except for the alleys/driveways where the street used by the other vehicle is always chosen.

Once you have chosen the roadway complete the accident level environmental variables (A25-A36) based on the values recorded for that roadway's traffic unit level environmental variables (D30-D41). The values will be nearly identical.

3. Not-in-a-junction: (NOTE: An accident whose Roadway Section Type [A24] was listed as "intersection related"

[code "05"] is an example of an accident not in a junction.)

First determine the traffic unit level environmental variables for each in-transport vehicle. If the first harmful event did not occur in a junction then there are two mutually exclusive locations in which it did occur.

- (a) Off roadway: For each in-transport vehicle involved in the first harmful event return to the location where the vehicle was last on the roadway. For this determination "on roadway" means that any part of the vehicle was in contact with the roadway. However, if a vehicle leaves one roadway and enters another roadway other than in the manner that the second roadway was designed to be travelled, ignore the second roadway and return to the location at which the first roadway was last departed. For example: (Situation A) Vehicle leaves roadway X, crosses a field, and enters roadway Y. Vehicle crosses roadway Y laterally until it impacts (a) an object (e.g., median barrier), (b) another motor vehicle, or (c) an object on the other side of the roadway. In any of these cases return to roadway X to record vehicle's traffic unit level environmental variables. (Situation B) Vehicle leaves roadway X to short cut traffic ahead. Vehicle while attempting to merge longitudinally on roadway Y impacts (a) an object--on or off the roadway, but on the trafficway, or (b) another motor vehicle. In either of these cases consider the vehicle to be associated with roadway Y.

Once you have determined the location where the vehicle last left the roadway the selection process for the proper values for the traffic unit level environmental variables is the same as for vehicles whose first harmful event was on the roadway. See (b) below for remaining instructions.

- (b) on roadway: Go to the location of the first harmful event. Determine the number of lanes (D30) most representative of the roadway at this location. Make this determination and all subsequent traffic unit level environmental determinations (D31-D41) by looking back along the vehicle's path just prior to the impact. The phrase "just prior" is purposely left vague since the decision rests with the investigator. However, the distance should only go so far as is needed to include those points of transition which are most representative of the environment. Your judgment will be evaluated on the basis of the reasonableness of your selections.

For the accident level environmental variables use a generalized cross-section of the roadway at the location of the first harmful event. Record TA-1 Classification (A22) for the roadway at this location. Determine the appropriate values for each of the remaining accident level environmental variables (A25-A38) at this location.

- (c) One special rule needs to be considered. If the location of the first harmful event is one and the same as an area of transition (of any kind--straight-curve, level-grade, wet-dry, concrete-bituminous, etc.) record the transition according to the following rules:
- (01) Choose undivided over divided;
 - (02) Choose other divisions over barrier division;
 - (03) Choose partial control over full access control;
 - (04) Choose no control over partial access controls;
 - (05) Choose shoulders over no shoulders;
 - (06) Choose two shoulders over one;
 - (07) Choose curve over straight;
 - (08) Choose grade over level;
 - (09) Choose hillcrest or sag over grade;
 - (10) Choose other surface types over concrete;
 - (11) Choose gravel, dirt, brick or block over bituminous;
 - (12) Choose gravel or dirt over brick or block;
 - (13) Choose dirt over gravel;
 - (14) Choose nondry surface conditions over dry;
 - (15) Choose snowy, slushy over other nondry conditions;
 - (16) Choose icy over wet or other conditions; and
 - (17) Choose wet over other conditions.

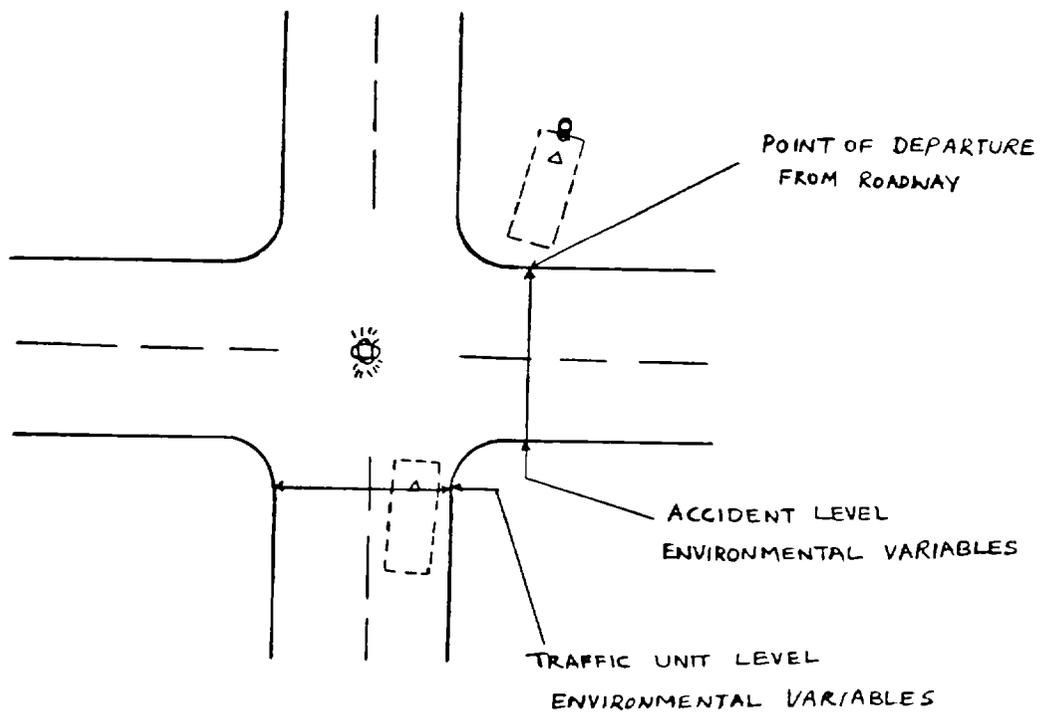
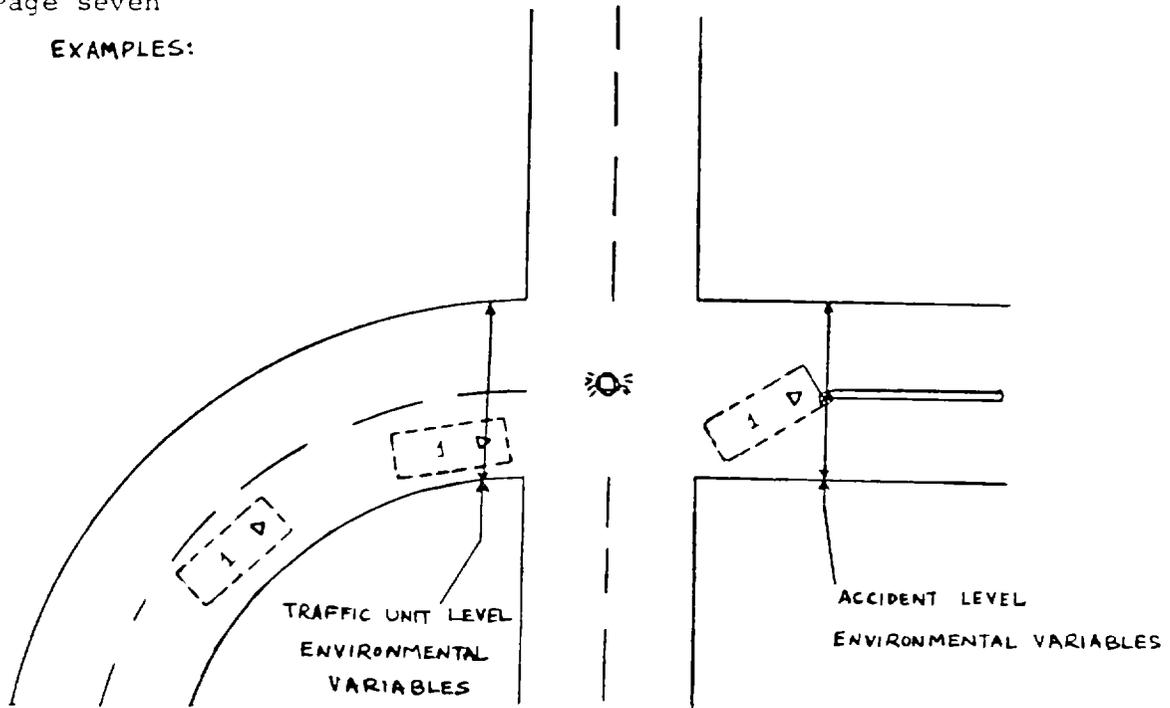
The location of the first harmful event and the subsequent selection of the accident level environmental variables can occur from a roadway different than any

roadway on which an in-transport vehicle was travelling in which case the accident and driver level environmental variable may be different. This is true even in single vehicle collisions. An example of this occurs when a vehicle is attempting to negotiate a junction, and it impacts an object outside of the junction but on another roadway (different street or different leg of the same street but which has different attributes than the other leg). Further, in the opinion of the investigator the former roadway is the one most representative of the vehicle's (driver's) environment just prior to the collision.

4. For those in-transport vehicles not involved in the accident's first harmful event (but involved in the accident) determine the traffic unit level environmental variables for that vehicle at the location where that vehicle's first harmful event occurs.

(See next page for examples)

EXAMPLES:



Variable Name: Road TA-1 Classification

Format: 2 columns - numeric

Beginning
Column 38

Element Values:

01 Interstate
02 Other federal aid primary
03 Federal aid secondary
04 Federal aid urban arterial
05 Federal aid urban collector
06 Nonfederal aid arterial
07 Nonfederal aid collector
08 Nonfederal aid local
99 Unknown

Remarks:

The Federal Highway Administration classification obtainable from the State Highway Department must be used. No other classification source is available.

Do not use the police report for selecting this element value.

When the road classification cannot be determined from the TA-1 classification map, contact the nearest FHWA office for their assistance. If FHWA is unable to assist, contact the nearest FARS representative since NASS is designed to be compatible with FARS on this issue. Refer problems in obtaining the FHWA classification to Contract Technical Managers.

Code "01" for on/off ramps that serve an interstate. See definition: D16.1-1976, section 2.5.17, p. 14.

Contrast this definition with sections 2.5.18 and 2.5.19 which should not be coded as interstate.

Code "08" for driveways or alleys when the accident occurs entirely on the driveway or alley.

ROADWAY TYPE

The contacts for determining roadway types have been established and are listed in the enclosed attachment. The procedure used to determine these contacts follow for information purposes only.

The coders should write or call the respective State contact before arriving at the State office.

- WHERE To determine the roadway type, the contractor must examine the TA-1 maps which are located in the State highway departments--usually in their planning section.
- HOW The easiest, and quickest way to determine the exact location of these maps is to contact the Federal Highway Administration's Division Planning and Research Engineer located in each State. These individuals would know who in the State highway departments to contact in order to see the TA-1 maps.
- CAUTION This highway classification is available from individual States only. The coder, should not, under any circumstances, attempt to classify a roadway without examining the TA-1 maps.

F. J. Daniels
Highway Research Engineer
(202) 426-4846

Contacts for Determining Roadway Type

Using TA-1 Classifications

State	U.S. DOT Federal Highway Administration Planning & Research Engineer	State Contact
New York (Ulster County)	Mr. Joseph Gardner, Jr. Transportation Planner Federal Highway Administration Leo W. O'Brien Federal Bldg. 9th Floor Albany, New York 12207 FTS No. 562-7515	Mr. Jonathan Newman Program Planning Bureau New York DOT Bldg. 5 State Office Campus Washington Avenue Albany, New York 12232 Tel. 518-457-2933
Pennsyl- vania	Mr. Robert Hall Supervisor Community Planner Federal Highway Administration 228 Walnut Street P.O. Box 1086 Harrisburg, Pennsylvania 17108 FTS No. 590-3472	Mr. Robert MacGinnes Pennsylvania DOT Transportation & Safety Bldg. 909D Foster & Commonwealth Avenue Tel. 717-787-7033
Alabama	Mr. C. D. Reagan Planning & Research Engineer Federal Highway Administration 441 High Street Montgomery, Alabama 36104 FTS 534-7377	Mr. Donald Truett Planning & Program Eng. Alabama Hwy. Department 11 South Union Street Room 313 Montgomery, Alabama 36104 Tel. 205-832-5354
Florida	Mr. David VanLeuven Planning & Research Federal Highway Administration 223 W. College Avenue P.O. Box 1079 Tallahassee, Florida 32302 FTS 946-4326	Mr. Steven Freggar Florida DOT Burns Building Tallahassee, Florida 32302 Tel. 904-488-4111
Michigan	Mr. Harry Drashen Planning & Research Engineer Federal Highway Administration Room 211, Federal Building P.O. Box 147 Lansing, Michigan 48901 FTS 374-1209	

U.S. DOT		
State	Federal Highway Administration Planning & Research Engineer	State Contact
Arkansas	Mr. William Perry Planning & Research Program Mgr. Room 3128, Federal Office Bldg. 700 West Capitol Avenue Little Rock, Arkansas 72201 FTS 740-5625	Mr. Bob Kessinger Arkansas Highway & Transit Highway Building Department Planning & Research Division I-30 South (9600 New Benton Hwy.) Little Rock, Arkansas Tel. 501-569-2401 Mailing Address: P.O. Box 2261 Little Rock, Ark 72203
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Variable Name: Class Trafficway

Format: 2 columns --numeric

Beginning
Column 40

Element Values:

- 01 Interstate
- 02 Other limited access
- 03 Other U.S. route
- 04 Other state route
- 05 Other major artery
- 06 County road
- 07 Local road
- 08 Other road (specify)
- 99 Unknown

Remarks:

Definitions:

Interstate System is any trafficway within the national system for interstate and defense trafficways.

Other Limited Access is any trafficway, such as a freeway, expressway, or parkway, with full control of access which may or may not be within the U.S. or state route numbered trafficway system, but not in the Interstate system.

Other U.S. Route Numbered is any traffic way within the U.S. trafficway system, excluding interstate and other limited access trafficways.

Other State Route Numbered is any trafficway within the state trafficway system, excluding other limited access trafficways.

Other Major Arterial is any trafficway, usually city streets and county highways, for which cross-traffic is required to stop.

County Road is any trafficway within a county trafficway system that does not fall within the interstate, other limited access, U.S. route numbered, state route numbered, or other major arterial system.

Local Street is any trafficway within a city trafficway system that does not fall within the interstate, other limited access, U.S. route numbered, state route numbered, or other major arterial system.

Other Road is any alley or driveway.

Variable Name: Roadway Section Type

Format: 2 columns - numeric

Beginning
Column 42

Element Values:

- 01 Non-junction
- 02 Three leg intersection
- 03 Four leg intersection
- 04 More than four leg intersection
- 05 Intersection related
- 06 Interchange area
- 07 Driveway, alley access, etc.
- 08 Railroad grade crossing
- 99 Unknown

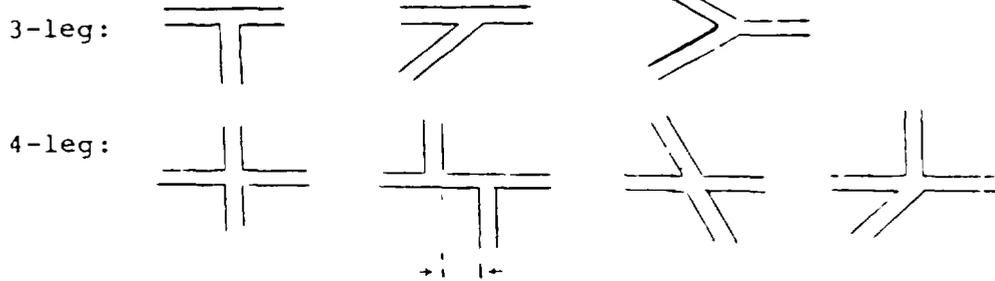
Remarks:

The element value selected is based on the location of the first harmful event and observation by the investigator of the site. If the first harmful event occurs off the roadway, refer to the section at the point of departure to code this variable.

Definition of roadway section types: D16.1-1976, sections 2.7.1 through 2.7.7, pages 18-20. Note that values "2", "3" and "4" (Three, four and more than four leg intersections) are not discussed directly; however, they are to be considered in the "at intersection accident" section (2.7.3) of the definition.

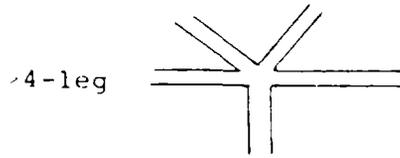
Definition of intersection, interchange, and driveway: D16.1-1976, sections 2.5.10, 2.5.16, 2.5.9, pages 13-14.

Examples of Intersections:

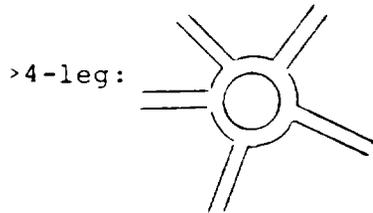
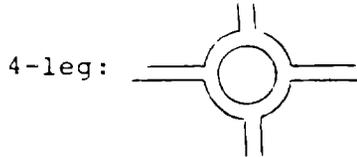
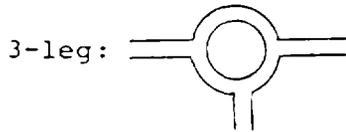


not more than
10 meters or
33 feet.

Variable: Roadway Section Type (cont'd.)



Rotary intersections are to be classified by the number of legs which lead to the inner circle. For example:



Should the first harmful event occur within the area formed by the prolongation of curb or edge lines of the approach legs of the intersection, it is to be classed as an intersection accident whether or not the collision which occurred was in any way related to the fact of being within an intersection. However, the code "intersection related" ("5") should only be used when the first harmful event occurs on an approach or exit from an intersection and results from an activity, behavior or control related to the movement of traffic units through the intersection.

On/off ramps to Interstates, other limited access highways, or other U.S. or state routes are coded "6".

Variable Name: Number of Travel Lanes

Format: 1 column - numeric

Beginning
Column 44

Element Values:

1	One
2	Two
3	Three
4	Four
5	Five
6	Six
7	Seven or more
9	Unknown

Remarks:

Code the value on the basis of the location of the first harmful event.

This location of the first harmful event and subsequently the attribute selected is determined first from observation by the investigator of the site or second from the police report or from any other source (e.g., interview, witness, etc.).

If the first harmful event occurs off the roadway, refer to the section at the point of departure to code this variable.

If the first harmful event is located in the intersection of two or more roadways, report the number of lanes from the most dominant roadway which was being used by one of the involved (in the first harmful event) motor vehicles.

The dominant roadway was defined in the accident level versus traffic unit level environmental data discussion preceding variable A22.

A roadway is that part of a trafficway where vehicles travel. A divided trafficway is composed of two or more roadways.

If traffic flows in both directions and is undivided, code the number of lanes in both directions. If the trafficway is divided into two or more roadways, code only the number of lanes for the roadway involved in the first harmful event.

If turn bays, acceleration, or deceleration lanes exist and are physically located within the cross section of the roadway where the first harmful event occurred, they are to be included in the number of lanes.

Variable: Number of Travel Lanes (cont'd.)

The number of lanes counted includes any which are narrowed or rendered unusable by restrictions of the right-of-way cited in variables A37 or A38.

In a number of instances there will be uncertainty as to the number of lanes due to (1) nonstandard roadway widths, (2) variability of width in the same roadway due to disrepair and other reasons, or (3) absence of lane, center, and edge lines, etc. The number coded in these cases should represent the number of operational lanes based on customary or observed usage.

On a road that has legal parking such that the legal parking area ends short of the junction of the roadway with another roadway or drive, and the space left between the end of the legal parking area and the beginning of the junction can be utilized for turning by a vehicle on the roadway, do not consider this additional area as another travel lane (regardless of customary or observed useage in this instance). This area should be construed as additional width to the existing travel lane(s). The only time that another lane will be counted at a junction is when that space is expressly designated for turning (e.g., by lane markings, signs, or signals).

For entrance on exit ramps code the number of lanes for that roadway section (also see A26 remarks).

Variable Name: Trafficway Division and Median Type

Format: 1 column - numeric

Beginning
Column 4)

Element Values:

- 1 Undivided
- Divided (Median width greater than or equal to four feet)
- 2 Paved flush--painted or unpainted (i.e., not curbed)
- 3 Curbed
- 4 Unpaved, uncurbed median (e.g., grass, gravel, etc.)
- 5 Median barrier
- 6 Other median type (specify)
- 9 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following A21.)

A trafficway may include several roadways if it is a divided highway. Trafficways are not divided unless the divider is a barrier or a median four feet or greater (1.2 meters) and curbed, unpaved uncurbed, or paved flush - painted or unpainted.

Physical division of roadways (e.g., box beam median) overrides simple lateral division (i.e., 4 foot separation); therefore, code "5" takes precedence over codes "2", "3", "4", and "6."

Entrance and exit ramps divided from (1) the primary roadway (the one used for TA-1 [A22] purposes) and (2) from each other (two ramps existing together) but separated by a barrier, should also be coded as divided.

Variable Name: Access Control

Format: 1 column - numeric

Beginning
Column 46

Element Values:

- 1 Full
- 2 Partial
- 3 Uncontrolled
- 9 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion following A21.)

Code "1" (Full) refers to those situations where the authority to control access is exercised to give preference to through traffic by providing access connection with selected public roads only and by prohibiting crossings at grade or direct driveway connections.

Code "2" (Partial) refers to those situations where the authority to control access is exercised to give preference to through traffic to a degree that, in addition to access connections with selected public roads, there may be some crossings at grade and some private driveway connections.

Code "3" (Uncontrolled) refers to those situations where the authority having jurisdiction over a highway, street, or road, does not limit the number of points of ingress or egress except through the exercise of control over the placement and geometrics of connections as necessary for the safety of the travelling public.

In summary, consider the roadway section which was chosen for the reporting of Number of Travel Lanes. If there are no at-grade crossings, then code "1". If at-grade crossings exist but there is an indication that a limiting of access is taking place, then code "2". If no indication of access limiting can be found, then code "3". If a decision cannot be made, code "9".

Variable Name: Direction of Travel Flow

Format: 1 column - numeric

Beginning
Column 47

Element Values:

- 1 One Way
- 2 Two way
- 9 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion following A21.)

Variable Name: Shoulder Presence

Format: 1 column - numeric

Beginning
Column 48

Element Values:

- 1 No shoulder
- 2 One shoulder
- 3 Two shoulders
- 9 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following A21.

Consider the same lanes which were used to determine the Number of Travel Lanes (A25) and report the presence of shoulders for those same lanes at and lateral to the location of the first harmful event, unless at an intersection. In the case of a first harmful event located within an intersection, identify the appropriate roadway using the criteria under A25 and then select the element value based on the lead of that roadway prior to the intersection.

Definition: D16.1-1976, section 2.2.18, pages 6-7.

Code "1" (no shoulders) if the roadway is curbed and has no shoulders; code the appropriate response if there are both curbs and shoulders (either code "2" or "3").

Shoulders are still present even if not usable at the time of the accident due to ambient conditions such as plowed snow, parked vehicles, etc.

Variable Name: Roadway Alignment

Format: 1 column - numeric

Beginning
Column 49

Element Values:

1	Straight
2	Curve
9	Unknown

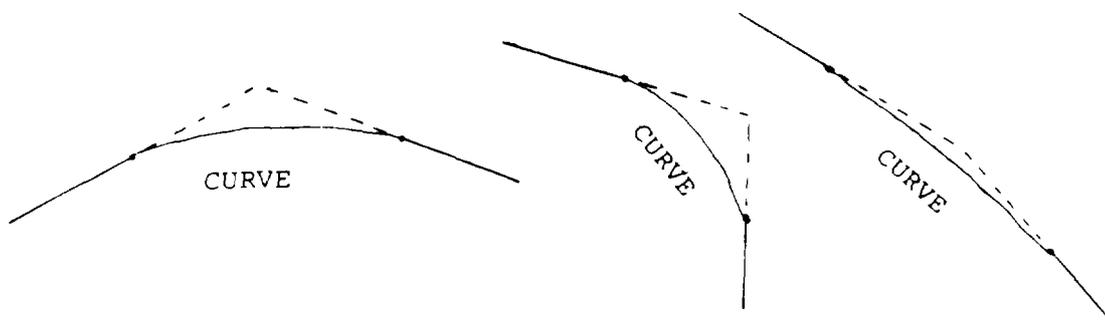
Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following A21.)

Code "1" (Straight) refers to a horizontal surface which is tangent.

Code "2" (Curve) refers to a horizontal surface in transition between two points of tangency as in the examples:



Any perceptually determined curvature between two tangent sections of a roadway constitutes a curve. It is not necessary to quantify the degree of curvature.

Variable Name: Roadway Profile

Format: 1 column - numeric

Beginning
Column 50

Element Values:

- 1 Level
- 2 Grade
- 3 Hillcrest
- 4 Sag
- 9 Unknown

Remarks:

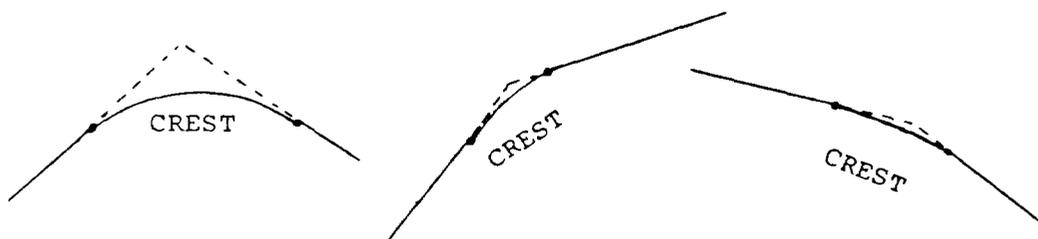
The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following A21.)

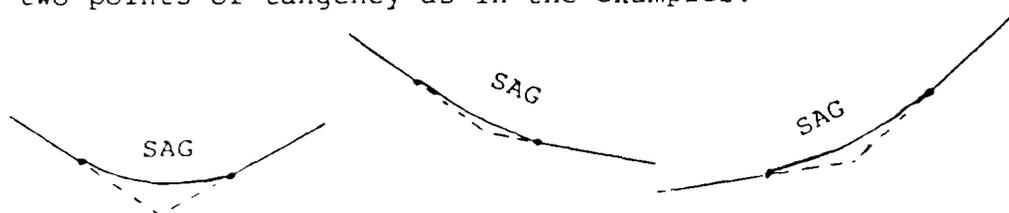
Code "1" (Level) refers to a tangent surface whose gradient is $< 2\%$.

Code "2" (Grade) refers to a tangent surface whose gradient is $\geq 2\%$.

Code "3" (Hillcrest) refers to a surface in vertical transition between two points of tangency as in the examples:



Code "4" (Sag) refers to a surface in vertical transition between two points of tangency as in the examples:



Variable Name: Surface Type

Format: 1 column - numeric

Beginning
Column 51

Element Values:

- 1 Concrete
- 2 Bituminous (asphalt)
- 3 Brick, block
- 4 Slag, gravel, or stone
- 5 Dirt
- 6 Other (specify)
- 9 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following A21.)

Variable Name: Surface Condition

Format: 1 column - numeric

Beginning
Column 52

Element Values:

- 1 Dry
- 2 Wet
- 3 Snowy, slushy
- 4 Icy
- 5 Other (e.g., sand, dirt, oil) (specify)
- 9 Unknown

Remarks:

The element value selected is based on the location of the first harmful event. In determining the surface condition the investigator should use police reports, interviews and observation of the site; do not report the conditions which are observed several days following the accident unless they are felt to be the same as those at the time of the accident.

Consider the same lanes which were used to determine the Number of Travel Lanes (A25) and report the surface condition for those same lanes.

It is possible for different surface conditions to exist when multiple roadways are involved. Furthermore, different surface conditions may exist on the same roadway (e.g., intermittent wet and dry sections on the same roadway). The investigator should consider but not necessarily be restricted by the information on the police report for making this assessment. Driver forms should also be consulted, particularly the one whose vehicle was on the above travel lanes which correspond to the first harmful event. Although it may be difficult to ascertain the surface condition for a particular section, the investigator should attempt to select the value which is most representative of the condition for those lanes.

If sand, dirt or oil occurs in combination with moisture (Codes "2", "3", or "4"), code the moisture condition. Code "5" only if the road was otherwise dry (Code "1").

Variable Name: Junction Traffic Controls

Format: 1 column - numeric

Beginning
Column 53

Element Values:

- 1 No controls
- 2 Control not functioning
Control Functioned
- 3 Traffic Signal
- 4 Stop sign or yield sign
- 5 Railroad crossing control
- 6 Other traffic control (specify)
- 8 Not applicable
- 9 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following A21.)

If the accident did not occur at a junction (A24, values 02-08), then code "8" (Not applicable).

Pavement markings do not constitute traffic control devices under the present definition.

Code "2" (Control not functioning) should be used for any non-functioning traffic control, including a stop sign turned the wrong way or broken off.

Code "3" (Traffic Signal) should be coded without regard to actuation (e.g., timer vehicle sensor, pedestrian button, etc.). Constant amber/red flashing signals are included here.

Code "5" (Railroad crossing control) although it is recognized that a railroad crossing is not actually a junction of roadways this refers to railroad crossings that have gates, flashing or light emitting signals, or watchmen to alert the motorist to on-coming trains.

If a school guard, police officer, or other officially designated person controls both pedestrian and vehicular traffic, code "6" (other traffic control). This includes statutory controls at junctions which are otherwise not physically controlled.

Variable: Junction Traffic Controls (cont'd.)

If the lanes which were used to determine the number of travel lanes have two or more controls, select one of the values as follows:

select "3" if combined with any value other than "5";
select "4" if combined with "6"; and
select "5" if combined with any value.

However, if the other traffic control ("6") is an officially designated person, then "6" takes precedence over values "1" through "5".

Information signs (e.g., "no left turn") do not constitute Junction Traffic controls as do Stop, Yield signs, etc.

Variable Name: Accident Occurrence in School Zone

Format: 1 column - numeric

Beginning
Column 54

Element Values:

1	No
2	Yes
9	Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following A21.)

Code "2" (yes) should only be used if a sign or road marking was present and the accident occurred during the time the sign or marking was in effect, (i.e., this applies to the short period before, during, and the short period following school sessions).

Variable Name: Speed Limit

Format: 2 columns - numeric

Beginning
Column 55

Element Values:

Code actual posted or statutory speed limit
99 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (A25). It is associated with the location of the first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor which identifies the environment at the crash site. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following A21.)

Disregard advisory or other speed signs which do not indicate the legal speed limit. Furthermore, special attention should be given so as not to confuse advisory signs on entrance or exit ramps or near intersections with the actual legal maximum speed.

Do not use the police report for selecting an element value.

If no sign is posted back in the direction from which the vehicle came for the above travel lanes, the investigator should reference state statutes to obtain the applicable statutory maximum for the site (local or state).

If a state has a statute that uniformly reduces the maximum allowable speed in or near a construction zone, then code the indicated reduced limit.

Code "99" (Unknown) should be used on roadways which are neither posted nor which have a statutory limit (e.g., parking lot roadways or entrance/exits, service station entrance/exits, or driveways, etc.).

Variable Name: Restriction of Right-of-Way at Scene

Format: 1 column - numeric

Beginning
Column 57

Element Values:

- | | | | |
|---|--|---|---|
| 1 | No restrictions | 5 | Roadway immersion (e.g.,
standing water) |
| 2 | Narrow bridge (as
defined) | 6 | Other roadway restriction
(specify) |
| 3 | Previous accident | 9 | Unknown |
| 4 | Maintenance, repair, or
construction activity
on roadway | | |

Remarks:

The element value selected is not restricted to the location of the first harmful event. The intent of this variable is to identify pre-crash conditions which abnormally reduce the width of the travel lanes available to any driver in the accident from the width ordinarily expected.

Element values "2" through "6" may be coded if the investigator feels any of them are in some way related to the accident as determined from the police report, driver interviews, witnesses, or scene investigation. The investigator should proceed through the list in numerically ascending order and code the first element felt to have existed. For example, if both "2" (narrow bridge) and "3" existed, code "2". The second or greater element will be accounted for on the next variable (A37).

Code "2" refers to a narrow bridge which satisfies any part of the criteria as follows:

- 1) has only one lane which is 18 feet or less in width,
- 2) has two lanes which together are 24 feet or less in width, and
- 3) the total approach width as measured from the outside edge of the shoulders is greater than the total bridge width as measured from curb to curb or parapet to parapet.

Variable Name: Restriction of Right-of-Way at Scene (cont'd.)

Code "5" (Roadway immersion) refers to standing or flowing water which reduces the ordinary width of the travel lanes; it is not necessary for the complete width of the lanes to be immersed.

Code "6" (Other roadway restriction) refers to other restrictions such as fallen rocks, objects, or cargo, mud slides, deep snow, waiting taxi, police or repair vehicle stopped in travel lanes, vehicles parked in roadway, etc. Make note of the other restriction in the available space. It excludes vehicles in the routine process of pulling into or out of parking lanes which very temporarily narrow or restrict the roadway.

Variable Name: Additional Restriction of Right-of-Way

Format: 1 column - numeric . Beginning Column 58

Element Values:

- | | | | |
|---|--|---|-------------------------------------|
| 3 | Previous Accident | 6 | Other roadway restriction (specify) |
| 4 | Maintenance, repair, or construction activity on roadway | 7 | More than two restrictions |
| 5 | Roadway immersion (e.g., standing water) | 8 | Not applicable |
| | | 9 | Unknown |

Remarks:

If only one restriction existed, it will have been coded under the variable (A37); therefore, code "8" for this variable (A38).

If a second but not a third restriction of the right-of-way existed, and you were prohibited from coding it on the preceding variable (A37), select the proper element value for that restriction to code this variable.

If more than two restrictions of the right-of-way existed, code "7". The initial restriction will have been coded under variable A37, while the remaining ones will be coded as "7" for this variable (A38).

Variable Name: Special Studies -- Side Intrusion

Format: 1 column - numeric

Beginning
Column 59

Element Values:

- 1 Yes
- 2 No

Remarks:

Code "1" (yes) means there is one or more side intrusion special studies forms associated with this accident (note, this does not mean there has to be side intrusion).

Code "2" (no) means there are no side intrusion special studies forms associated with this accident.

This variable is to be answered in every case; there should be no blanks.

Variable Name: Special Studies -- Steering Column

Format: 1 column - numeric

Beginning
Column 60

Element Values:

- 1 Yes
- 2 No

Remarks:

Code "1" (yes) means there is one or more steering column special studies forms associated with this accident.

Code "2" (no) means there are no steering column special studies forms associated with this accident.

This variable is to be answered in every case; there should be no blanks.

Variable Name: Special Studies -- Truck Underride

Format: 1 column - numeric

Beginning
Column 63

Element Values:

- 1 Yes
- 2 No

Remarks:

Code "1" (yes) means there is one or more truck underride special studies forms associated with this accident.

Code "2" (no) means there are no truck underride special studies forms associated with this accident.

This variable is to be answered in every case; there should be no blanks.

Variable Name: Pedestrians or Nonmotorist's Number

Format: 2 columns - numeric

Beginning
Column 10

Element Values:

Range: 01 through 26

Remarks:

Numbers assigned to pedestrians or nonmotorists must be consecutive starting with "01"; no numbers may be skipped. Where two or more pedestrians or nonmotorists can be associated with a vehicle (motor or other), pedacycle, or nonmotorists conveyance (any human-powered device designed for transporting people), assign their numbers in sequence.

The driver (person with steering control) of a pedacycle is assigned the lowest number sequentially of any of the pedacyclist specific to that unit (e.g., a pedacycle for two, the pedacyclist in front has steering control so is the driver with Pedestrian or Nonmotorists's Number (P06) "01"; the other pedacyclist in the rear is the passenger with Pedestrian or Nonmotorist's Number (P06) "02").

Numbers assigned to nonmotorists in motor vehicles not in transport are assigned sequentially left to right and front to back.

Variable Name: Pedestrian on Nonmotorist's Type

Format: 1 column - numeric

Beginning
Column 12

Element Values:

- 1 Pedestrian
- 2 Bicyclist
- 3 Other cyclist (specify)
- 4 Animal related
- 5 Other nonmotorist (specify)
- 9 Unknown

Remarks:

A pedestrian ("1") is defined as any person who is on a trafficway or on a sidewalk or path contiguous with a trafficway, and who is not in or on a nonmotorist conveyance. This includes persons who are in contact with the ground, roadway, etc. but who are holding on to a vehicle.

A nonmotorist conveyance is defined as any human-powered device by which a nonmotorist may move, or by which a pedestrian or nonmotorist may move another nonmotorist, other than by pedaling. A nonmotorist conveyance includes the following: baby carriage, coaster wagon, ice skates, roller skates, push cart, scooter, skate board, skis, sled, wheel chair, rickshaw, etc. This includes those persons in a nonmotorist conveyance who hold on to a motor vehicle in motion. Excluded are pedacyclists.

Bicyclist ("2") refers to only those pedacyclists who were either a driver or passenger on a bicycle. This includes those bicyclists who hold on to a motor vehicle in motion.

Code "3" refers to all other pedacyclists. This includes those pedacyclists who hold on to a motor vehicle in motion.

Animal related means that the nonmotorist was either riding on an animal or in an animal-powered conveyance.

An other nonmotorist includes those persons inside a motor vehicle not in transport and any other person not included under the above definitions of a pedestrian, bicyclist, other cyclist, or animal related.

Variable Name: Pedestrian or Nonmotorist's Age

Format: 2 columns - numeric

Beginning
Column 13

Element Values:

00 Less than one year old
97 97 years and older
99 Unknown

Remarks:

Age is recorded at time of accident with respect to the pedestrian's or nonmotorist's last birthday.

Variable Name: Pedestrian or Nonmotorist's Sex

Format: 1 column - numeric

Beginning
Column 15

Element Values:

1 Male
2 Female
9 Unknown

Remarks:

Self-explanatory.

PEDESTRIAN & NONMOTORIST FORM

P10

Variable Name: Pedestrian or Nonmotorist's Height

Format: 2 columns - numeric

Beginning
Column 16

Element Values:

Range : 12 through 85 inches
99 Unknown

Remarks:

Self-explanatory.

PEDESTRIAN & NONMOTORIST FORM

P11

Variable Name: Pedestrian or Nonmotorist's Weight

Format: 3 columns - numeric

Beginning
Column 18

Element Values:

Range; 005 through 400 pounds
999 Unknown

Remarks:

Self-explanatory.

Variable Name: Purpose of Trip

Format: 2 columns - numeric

Beginning
Column 21

Element Values:

01 To place of work	14 Vacation
02 Work-related business	15 Change of vehicle without change of mode
03 Convention	16 Change means of trans- portation
04 Civic/educational/religious	17 Pick up or leave off passengers
05 Eat meal	18 Return home
06 Medical or dental	19 Lodging (overnight)
07 Shopping	20 Other social (specify)
08 Family or personal business	21 Other purpose (specify)
09 Visit friends or relatives	98 Not applicable
10 Pleasure driving	99 Unknown
11 Sightseeing	
12 Entertainment	
13 Recreation (participant)	

Remarks:

* Trip is defined as "any travel from one address (place) to another by private motor vehicle, public transportation, pedalcycle, or on foot."

Travel to place of work--includes travel to a place where one reports for work. Does not include any other work-related travel.

Work-related business--trips related to business activities except to the place of work; for example, a plumber drives to a wholesale dealer to purchase supplies for use in his business, a company executive travels from his office to another firm to attend a business meeting.

Convention--trips made to attend business, professional, special interest and other types of conventions (for example, Shriners', American Legion, etc.).

Civic/Educational/Religious--trips to political rallies, legislative hearings, voting places, etc.; to school, college or university for class(es), to attend PTA meetings, attend seminars, etc.; to church services or to participate in other religious activities. Do not include in this category social activities which take place at a church or school but cannot be classified as religious or educational.

Variable: Purpose of Trip (cont'd.)

Eat Meal--trips taken to eat a meal in a public place. Does not include trips to a friend's home for dinner. These trips should be coded as "visit friends or relatives".

Doctor or Dentist--trips made for medical, dental or psychiatric treatment or other related professional services.

Shopping--includes "window-shopping" and purchase of commodities such as groceries, furniture, textiles, medicines, etc., for use or consumption elsewhere.

Family or Personal Business--trips taken to attend organized functions of the family or friends, such as weddings, anniversaries, graduations, reunions and funerals; or because of illness or other emergency in the family or among friends. Includes trips taken to settle the family estate, sell family or personal property, look for a new residence, etc. Includes the purchase of services such as cleaning garments, servicing of an automobile, beauty parlor treatments, banking, legal services, etc.

Visit Friends or Relatives--trips made to visit friends or relatives but not prompted by organized family affairs or an emergency.

Pleasure Driving--includes driving trips made with no other purpose listed here but to "go for a drive" (which may or may not have a destination); for example, a Sunday drive in the country.

Sightseeing--trips taken to sightsee or tour with a particular place planned to visit; this distinguishes "Sightseeing" from "Pleasure Driving".

Entertainment--trips taken to go to a movie, the theater, opera, concert, bar, tavern, discotheque, cabaret, spectator sports (such as a ball game, races, track meet), or an amusement park.

Recreation (participant)--trips taken to participate in sporting or outdoor activities such as fishing, hunting, golf, swimming, picnicking, skiing, etc.; also, trips to participate in indoor activities such as skating, bowling, basketball, etc.

Vacation--trips reported by the respondent as "vacations".

Change of vehicle without change of mode--trips made specifically to change from one vehicle to another within the same "means of Transportation" category. (For example, transferring from one bus to another, one plane to another, or from one passenger car to another.)

Variable: Purpose of Trip (cont'd.)

Change means of transportation--trips made specifically to change from one means of transportation to another; for example, taking a taxi to the airport to catch a plane, driving a car to a fringe parking area to take a bus into town, etc.

Pick up or leave off passengers--trips that are made to serve a passenger. For example, a trip by Mrs. Columbo to pick up her mother and drive her to the store on Travel Day would be reported as two trips: the trip to her mother's home for the purpose of picking up a passenger and the trip to the store for the purpose of shopping.

Return home--the trip is to the residence of the respondent at the time of the trip. In the case of a college student who lives on campus and is interviewed at school, trips to the dormitory or other living quarters on the campus are considered "Return home".

Lodging (overnight)--trips made for the purpose of taking overnight accommodations. This category is also to be used in lieu of "Return home" when return trips are to this lodging.

Social--trips taken to enjoy some form of social activity involving friends or acquaintances, such as a party, playing cards, dancing, etc.

Other--any purpose for a trip that does not fit into one of the above categories. Specify the purpose in the space provided in the trip column.

The following categories summarize the types of overnight accommodations referred to as a "lodging".

Friends or Relatives--lodging as a guest in the house of friends or relatives. Also included are nights spent in a facility owned by friends or relatives such as a cabin, houseboat, cottage, etc., regardless of whether the friends or relatives were present, as long as rent was not involved.

Rental accommodations--includes hotels, motels, motor inns, lodges, resorts, rental cabins or cottages, rented condominiums, tourist homes, YWCA's, Jewish Community Centers and other commercial establishments.

Own cabin, campsite or vacation home--refers to privately owned secondary homes or property owned by any member of the household.

Variable: Purpose of Trip (cont'd.)

Camping on public (government) campground--refers to park campground space owned or operated by federal, state, or local government.

Not applicable ("98") indicates that the pedestrian or nonmotorist was not on a trip at the time of the accident.

Variable Name: Months Cycling Experience

Format: 2 columns - numeric

Beginning
Column 23

Element Values:

Code actual months of previous cycling experience up to 60

61 Greater than five years
98 Not applicable
99 Unknown

Remarks:

Code all (current or earlier) actual months of previous cycling experience for the type of pedacycle the nonmotorist operator was riding (e.g., bicycle, unicycle, etc.). Included are operators of childrens tricycles). Not applicable ("98") is coded for all pedestrians, animal related nonmotorists, other nonmotorists, and passengers, if present, on the pedacycle.

Variable Name: Pedestrian or Nonmotorist's Location

Format: 2 columns - numeric

Beginning
Column 25

Element Values:

01	In motor vehicle not in transport on trafficway	08	Non-intersection in crosswalk
02	In motor vehicle not in transport off trafficway	09	Non-intersection on sidewalk, median, island, or shoulder
03	In motor vehicle not in transport location unknown	10	Non-intersection on bike path
04	In intersection in crosswalk	11	Non-intersection on roadway
05	In intersection on sidewalk, median, or island	12	Non-intersection off road
06	In intersection on roadway	99	Unknown
07	In intersection location unknown		

Remarks:

Codes "01" through "03" are reserved for one type of other nonmotorist. The remaining codes ("04" through "12" are applicable to all types of pedestrians or nonmotorists. Select the value which best represents the location of the pedestrian or nonmotorist at the time of impact.

Code "10" (non-intersection on bike path) refers to any officially designated path or lane (on or off the road but not within an intersection) on which pedacyclists have preference.

PEDESTRIAN & NONMOTORIST FORM

P15

Variable Name: Pedestrian's Action

Format: 2 columns - numeric

Beginning
Column 27

Element Values:

01 Pedestrian struck vehicle	07 Vehicle backing up
02 Dart-out, midblock	08 Disabled vehicle related
03 Intersection dash	09 Struck by rebounding or
04 Vehicle turning, pedestrian not running	out-of-control vehicle
05 Intersection related, vehicle not turning, pedes- trian not running	10 Other circumstances (specify)
06 Stopped vehicle, midblock - going to or from (e.g., bus stop, vendor, etc.)	98 Not applicable
	99 Unknown

Remarks:

Not applicable ("98") is coded if the Nonmotorist's Type (P07)
is not equal to pedestrian ("1").

Variable Name: Treatment - Mortality

Format: 1 column - numeric

Beginning
Column 29

Element Values:

- 1 Fatal
Nonfatal
- 2 Hospitalization
- 3 Transported and released
- 4 Treatment-other (specify)
- 5 No treatment
- 9 Unknown

Remarks:

Official sources (if they exist) take precedence over interview data.

Code "1" (Fatal) within 30 days of accident.

Code "2" (Hospitalization) when hospitalization occurs as a result of injury (need not be taken directly to a hospital). See Hospital Stay (P.17) for hospitalization criterion.

Code "3" (Transported and released) when the person went directly from the accident scene to a treatment facility (hospital, clinic, doctor's office, etc.). The means of transportation is not a consideration.

Code "4" (Treatment-other) includes doctor treatment, treatment at scene, first aid, self-treatment, hospital if other than directly from scene but treated and released, etc.

If a person survives the injuries, receives treatment at a hospital, but is not admitted for hospitalization, that person's treatment is to be coded as either "3" or "4", depending upon whether the person went directly or indirectly to the hospital. It does not matter if the person is treated for one hour or twelve, only that the person is released following treatment. Nor does it matter if the treatment begins prior to midnight and spans into the following day.

Variable Name: Hospital Stay

Format: 2 columns - numeric

Beginning
Column 30

Element Values:

Code number of days hospitalized up to 30
31 31 days or more
98 Not applicable (e.g., D.O.A.)
99 Unknown

Remarks:

Official sources (if they exist) take precedence over interview data.

Code "00" if not injured or injured but not admitted.

Code "98" (Not applicable) if fatal at scene, pronounced dead on arrival, or survival does not extend beyond the emergency room.

The basis for the number of days coded is an overnight criterion. Every time a person remains past midnight subsequent to admission, it is one day. The only exception is when a person dies on the same day as the admission.

In the event that the person survives the emergency room but dies subsequent to admission, then code at least "01", even if the person expires the same day as admitted.

If a person is admitted, lived four days in the hospital, then expired, code "04".

Variable Name: Working Days Lost

Format: 2 columns - numeric

Beginning
Column 32

Element Values:

Code number of days for which work was lost up to 30
31 31 days or more
98 Not applicable (e.g., D.O.A.)
99 Unknown

Remarks:

Report the actual number of "work" days lost due to accident by an employed person or a full-time college student; children, retirees, or unemployed persons are not included.

Employed is defined to mean that the person was scheduled to work at least four hours on each of the days lost. Each such day is counted as a full day so long as the person was scheduled to work at least four hours on the day lost. Do not cummulate the hours and convert to equivalent full time days; however, indicate on the form if the person works less than full time but greater than four hours per day by annotating "parttime" or "PT".

The days lost need not be due to injury.

Days lost include Saturdays, Sundays, afternoon and evening shifts if so scheduled. Do not count double shifts or days at time and one-half pay, etc., as more than one day.

If a person's not employed, not a full-time college student, or works less than four hours per day, then code "98".

If a person is fatal at scene, pronounced dead on arrival, or survival does not extend beyond the emergency room, code "98" (not applicable).

If a person expires twenty days following the accident, code the number of work days which were lost during the period. In this example, it would be twenty or less (depending upon the number of days scheduled) if the person was employed or a full-time college student.

Do not include days lost by persons who were not directly involved in the accident but who lost days because of it (e.g., husband was not in accident but stayed home to take care of wife who was injured and required assistance).

Variable Name: This variable deleted in this version

Format: 1 column

Beginning
Column 34

Variable Name: Relation of Interviewee to
Pedestrian or Nonmotorist

Format: 1 column - numeric

Beginning
Column 35

Element Values:

- 1 No interview
- 2 Same person
- 3 Other accident involved person (specify)
Uninvolved Person
- 4 Relative or friend
- 5 Other uninvolved person (specify)
Combination of Persons
- 6 One of which was accident involved
- 7 None of which were accident involved
- 9 Unknown

Remarks:

PEDESTRIAN & NONMOTORIST FORM

P21
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P35
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P56

Variable Name: 1st O.I.C.-Body Region
2nd O.I.C.-Body Region
3rd O.I.C.-Body Region
4th O.I.C.-Body Region
5th O.I.C.-Body Region
6th O.I.C.-Body Region

Format: 1 column - alphanumeric

Beginning	
Column	36
	44
	52
	60
	68
	76

Element Values:

H Head - Skull	B Back - thoraco-lumbar spine
F Face	P Pelvic - hip
N Neck - cervical spine	Y Lower extremities (leg)
S Shoulder	T Thigh
X Upper extremities (arm)	K Knee
A Arm (upper)	L Leg (lower)
E Elbow	Q Ankle - foot
R Forearm	O Whole body
W Wrist - hand	U Injured, unknown region
C Chest	8 Not applicable
M Abdomen	9 Unknown if injured

Remarks:

The O.I.C. body regions are mapped into the I.S.S. body regions as follows: (Reference should also be made to: "The Abbreviated Injury Scale," 1976, pp. 19-20.)

<u>O.I.C.</u>	<u>I.S.S. Body Region</u>
H - * - (except - * E)	(1) Head or Neck
N - * -	
F - - -, H * E	(2) Face
C - * -, B S *	(3) Chest
M - * -, B I * -	(4) Abdominal or pelvic contents
+ - * - (+ includes S,P,X,A E,R,W,Y,T,L,K or Q)	(5) Extremities or pelvic girdle
O - - -, U - - -, - - * -	(6) General (external)

PEDESTRIAN & NONMOTORIST F PM

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P42
P49
P56

Variable Name: 1st O.I.C.-Body Region (cont'd.)
2nd O.I.C.-Body Region (cont'd.)
3rd O.I.C.-Body Region (cont'd.)
4th O.I.C.-Body Region (cont'd.)
5th O.I.C.-Body Region (cont'd.)
6th O.I.C.-Body Region (cont'd.)

* Included for general; excluded for the other five regions (specifically L, C, A, B, and H when H is combined as follows: H(R,L,B)HE, F(R,L,B)HE, or FCHR.

For coding the following situations the correct procedure is:

Not Injured: $\frac{8}{36}$ $\frac{8}{37}$ $\frac{8}{38}$ $\frac{8}{39}$ $\frac{8}{40}$ $\frac{9}{41}$ $\frac{8}{42}$ $\frac{8}{43}$

Injured, severity unknown:

$\frac{U}{36}$ $\frac{U}{37}$ $\frac{U}{38}$ $\frac{U}{39}$ $\frac{7}{40}$ $\frac{9}{41}$ $\frac{7}{42}$ $\frac{1,2,3,4,5, \text{ or } 6}{43}$

$\frac{8}{44}$ $\frac{8}{45}$ $\frac{8}{46}$ $\frac{8}{47}$ $\frac{8}{48}$ $\frac{9}{49}$ $\frac{8}{50}$ $\frac{8}{51}$

Unknown if injured: $\frac{9}{36}$ $\frac{9}{37}$ $\frac{9}{38}$ $\frac{9}{39}$ $\frac{9}{40}$ $\frac{9}{41}$ $\frac{9}{42}$ $\frac{9}{43}$

$\frac{8}{44}$ $\frac{8}{45}$ $\frac{8}{46}$ $\frac{8}{47}$ $\frac{8}{48}$ $\frac{9}{49}$ $\frac{8}{50}$ $\frac{8}{51}$

Note: Be sure to complete one additional row with "8" and "98" when the person is injured but has less than six injuries. This is true even when the person is injured but the severity is unknown, or if it is unknown whether or not the person is injured. Refer to the last O.I.C. note on page 7.

PEDESTRIAN & NONMOTOPIST FORM

P22
P29
P36
P43
P50
P57

Variable Name: 1st O.I.C.- Aspect of Injury
2nd O.I.C.- Aspect of Injury
3rd O.I.C.- Aspect of Injury
4th O.I.C.- Aspect of Injury
5th O.I.C.- Aspect of Injury
6th O.I.C.- Aspect of Injury

Format: 1 column - alphanumeric

Beginning
Column 37
45
53
61
69
77

Element Values:

R	Right	S	Superior - upper
L	Left	I	Inferior - lower
B	Bilateral	W	Whole region
C	Central	U	Injured, unknown aspect
A	Anterior - front	8	Not applicable
P	Posterior - back	9	Unknown if injured

Remarks:

PEDESTRIAN & WORKER INJURY FORM

L 2
 F 7
 P 7
 F 14
 F 51
 P 53

Variable Name: 1st O.I.C.- Lesion
 2nd O.I.C.- Lesion
 3rd O.I.C.- Lesion
 4th O.I.C.- Lesion
 5th O.I.C.- Lesion
 6th O.I.C.- Lesion

Format: 1 column - alphanumeric

Beginning
 Column 38
 46
 54
 62
 70
 78

Element Values:

- | | |
|--------------|---------------------------|
| L Laceration | D Dislocations |
| C Contusion | N Crushing |
| A Abrasions | M Amputation |
| F Fractures | B Burn |
| P Pain | X Asphyxia |
| K Concussion | O Other |
| H Hemorrhage | U Injured, unknown lesion |
| V Avulsion | 8 Not applicable |
| R Rupture | 9 Unknown if injured |
| S Sprains | |

Remarks:

Variable Name: Special Studies -- Roof Intrusion

Format: 1 column - numeric

Beginning
Column 61

Element Values:

- 1 Yes
- 2 No

Remarks:

Code "1" (yes) means there is one or more roof intrusion special studies forms associated with this accident.

Code "2" (no) means there are no roof intrusion special studies forms associated with this accident.

This variable is to be answered in every case; there should be no blanks.

Variable Name: Special Studies -- Motorcycle

Format: 1 column - numeric

Beginning
Column 62

Element Values:

- 1 Yes
- 2 No

Remarks:

Code "1" (yes) means there is one or more motorcycle special studies forms associated with this accident.

Code "2" (no) means there are no motorcycle special studies forms associated with this accident.

This variable is to be answered in every case; there should be no blanks.

PEDESTRIAN & NONMOTORIST FORM

P24
P31
P38
P45
P52
P59

Variable Name: 1st O.I.C. - System/Organ
2nd O.I.C. - System/Organ
3rd O.I.C. - System/Organ
4th O.I.C. - System/Organ
5th O.I.C. - System/Organ
6th O.I.C. - System/Organ

Format: 1 column - alphanumeric

Beginning
Column 39
47
55
63
/1
79

Element Values:

S	Skeletal	G	Urogenital
V	Vertebrae	K	Kidneys
J	Joints	R	Respiratory
D	Digestive	P	Pulmonary - lungs
L	Liver	M	Muscles
N	Nervous system	I	Integumentary
B	Brain	W	All systems in region
C	Spinal cord	U	Injured, unknown system
E	Eyes - ears	8	Not applicable
A	Arteries - veins	9	Unknown if injured
H	Heart		
Q	Spleen		

Remarks:

PEDESTRIAN & NONMOTORIST FORM

P2:
P32:
P39:
P46:
P5:
P6:

Variable Name: 1st O.I.C. - Abbreviated Injury Scale
 2nd O.I.C. - Abbreviated Injury Scale
 3rd O.I.C. - Abbreviated Injury Scale
 4th O.I.C. - Abbreviated Injury Scale
 5th O.I.C. - Abbreviated Injury Scale
 6th O.I.C. - Abbreviated Injury Scale

Format: 1 column - numeric

Beginning	
Column	40
	48
	56
	64
	72
	80

Element Values:

- 1 Minor injury
- 2 Moderate injury
- 3 Severe injury
- 4 Serious injury
- 5 Critical injury
- 6 Maximum (untreatable)
- 7 Injured, unknown severity
- 8 Not applicable
- 9 Unknown if injured

Remarks:

AIS-7 indicates the presence of known injury but unknown injury severity, and the order of the AIS-7 injury code among the remaining injury codes is not indicative of the "probable" degree of severity (e.g. if the AIS-7 is listed first, it is not necessarily the most severe injury nor does it imply least severe if listed last).

PEDESTRIAN & NONMOTORIST FORM

P26
P33
P40
P47
P54
P61

Variable Name: 1st O.I.C. - Injury Source
2nd O.I.C. - Injury Source
3rd O.I.C. - Injury Source
4th O.I.C. - Injury Source
5th O.I.C. - Injury Source
6th O.I.C. - Injury Source

Format: 2 columns - numeric

Beginning
Column 41
49
57
65
73
81

Element Values:

Front	25 Other occupants
01 Windshield	26 Interior loose objects
02 Mirror	29 Other interior objects
03 Steering assembly, including transmission selector lever when column mounted	Roof
04 Add-on equipment (e.g., CB tape deck, air conditioner)	31 Front header
05 Instrument panel and below, excluding foot controls and parking brake	32 Rear header
09 Other front object	33 Roof side rails
Side	34 Roof or convertible top
11 Side interior surface, excluding hardware or armrests	Floor
12 Side hardware or armrests	41 Floor
13 Roof pillar supports	42 Floor or console mounted transmission lever, including console
14 Window glass or frame	43 Parking brake handle
19 Other side object	44 Foot controls including parking brake
Interior	Rear
21 Seat, back support	51 Backlight (rear window)
22 Belt restraint system	52 Backlight storage rack, door, etc.
23 Head restraint	59 Other rear objects
24 Air cushion	Exterior of Nonmotorist's Vehicle
	61 Hood
	62 Outside hardware (e.g., outside mirror, antenna)
	63 Other exterior surface or tires

PEDESTRIAN & NONMOTORIST FORM

P26
P33
P40
P47
P54
P61

Variable Name: 1st O.I.C. - Injury Source (cont'd.)
2nd O.I.C. - Injury Source (cont'd.)
3rd O.I.C. - Injury Source (cont'd.)
4th O.I.C. - Injury Source (cont'd.)
5th O.I.C. - Injury Source (cont'd.)
6th O.I.C. - Injury Source (cont'd.)

69 Unknown exterior objects	Other Vehicle or Object in
Exterior of Other Motor	the Environment
Vehicle	86 Ground
71 Bumper	87 Other vehicle or object
72 Hood edge	89 Unknown vehicle or
73 Other front of vehicle	object
74 Hood	Noncontact Injury
75 Hood ornament	90 Noncontact injury
76 Windshield, roof rail,	source e.g., impact
A-pillar	force, heat or flame
77 Side surface	from fire, battery acid,
78 Side mirrors	etc.
79 Other side protrusions	97 Injured, unknown source
80 Rear surface	98 Not applicable
81 Undercarriage	99 Unknown if injured

Remarks:

Interior flying glass refers to the person being struck by glass which has already fractured and is airborne. This is coded as "26" (Interior loose objects). This does not refer to a person causing glass to shatter upon their impacting it.

PEDESTRIAN & NONMOTORIST FORM

P27
P34
P41
P55
P62

Variable Name: 1st O.I.C. - Injury Data Source
2nd O.I.C. - Injury Data Source
3rd O.I.C. - Injury Data Source
4th O.I.C. - Injury Data Source
5th O.I.C. - Injury Data Source
6th O.I.C. - Injury Data Source

Format: 1 column - numeric

Beginning	
Column	43
	51
	59
	67
	75
	83

Element Values:

Official	
1 Autopsy records with or without hospital/medical records	5 E.M.S. personnel
2 Hospital/medical records without autopsy records	6 Police
3 Treating physician	7 Other source (specify)
Unofficial	8 Not applicable
4 Interviewee	9 Unknown

Remarks:

Code "1" (Autopsy records with or without hospital/medical records) excludes records from lay, non-medical personnel; they must be the result of an autopsy by a physician, or other similarly qualified life scientist.

Code "3" (Treating physician) refers to any physician who saw the person and who has records that were used.

Code "4" (Interviewee) refers to the person who was interviewed to get the information on this form (not necessarily the person described on this form). The interviewee is defined in variable P20.

Code "5" (E.M.S. personnel) refers to a person certified by the state as trained in emergency medical service techniques. Code "5" should not be used for ambulance, police, etc. personnel not trained in E.M.S. techniques.

Code "6" (Police) can be used but only when no other source of injury information is available. See last sentence of first paragraph on page 6, Pedestrian & Nonmotorist.

PEDESTRIAN & NONMOTORIST FORM

F27
F44
P41
P48
P55
F62

Variable Name: 1st O.I.C. - Injury Data Source (cont'd.)
2nd O.I.C. - Injury Data Source (cont'd.)
3rd O.I.C. - Injury Data Source (cont'd.)
4th O.I.C. - Injury Data Source (cont'd.)
5th O.I.C. - Injury Data Source (cont'd.)
6th O.I.C. - Injury Data Source (cont'd.)

Code "7" is used, for example, with data obtained from lay coroners.

Code "8" (Not applicable) is to be used when information was not available. In other words, this variable reports on the availability of the injury information.

Variable Name: Injury Severity (Police Rating)

Format: 1 column - numeric

Beginning
Column 84

Element Values:

- 1 K - Killed
- 2 A - Incapacitating Injury
- 3 B - Nonincapacitating Injury
- 4 C - Possible Injury
- 5 0 - No injury
- 9 Unknown

Remarks:

Code the police's reported injury severity for this pedestrian or nonmotorist. If the police report contains a detailed description of the injuries but does not translate the injuries into the KABCO codes, use the police method for doing so. For example, injuries which are considered to be of an incapacitating nature are classified as "A" (code "2"), non-incapacitating evident injuries are "B" (code "3"), and possible injuries are "C" (code "4"). Property damage only is classified as "O" (code "5").

Variable Name: Traffic Violation Charged
Against This Pedestrian or Nonmotorist

Format: 1 column - numeric

Beginning
Column 85

Element Values:

- 1 Yes (specify)
- 2 No
- 9 Unknown

Remarks:

If the police charged this pedestrian or nonmotorist with any violation, then code yes ("1"). The source is the police report. Specify the violation in the space provided, if known.

Variable Name: Alcohol Involvement

Format: 1 column - numeric

Beginning
Column 86

Element Values:

- 1 No, test not given
- 2 No, test given
- 3 Yes, test not given
- 4 Yes, test given
- 9 Unknown

Remarks:

The source of information for this variable is the police report. First find the location on the police report that indicates the police person's assessment with respect to whether or not alcohol was involved in this accident. In most instances failure to specify should be interpreted as no ("1" or "2"). Next determine if a blood alcohol test was given. This test could be a blood, breath, or urine test. No psychomotor (police observation of driver actions) test is of any value in this instance. Combine these two elements (involvement and test) in selecting the appropriate response.

Code "2" (No, test given) refers to a situation where a person is tested to determine the presence of alcohol but in the investigating officer's opinion, alcohol is not involved. This does not mean it is not present, only that it was not involved. Also, it does not mean "no test given"; instead, it may be interpreted as meaning "no involvement of alcohol, but a test was given to determine the presence of alcohol." This may be determined by the police whether or not the results are pending or available when the police report is completed.

Test includes instrumented field screening tests which indicate the presence of alcohol but not necessarily the particular level. These devices are designed to segregate candidates for further testing from those persons where the suspected presence of alcohol is either non-existent or too low for additional tests.

The various PSUs should discuss their individual unique police reports with the Zone Centers to distinguish involvement from presence of alcohol.

Variable Name: Vehicle Number

Format: 2 columns - numeric

Beginning
Column 10

Element Values:

Range: 01 through 30

Remarks:

Numbers assigned to vehicles must be consecutive starting with "01" with no missing numbers.

Each motor vehicle in transport must be assigned a unique number. If there is only one vehicle in the accident the vehicle has to be coded as vehicle number one. Note however, that if there is only one vehicle and that vehicle was struck by a non-occupant, then vehicle number one can be a struck vehicle. Furthermore, in a two vehicle collision vehicle 1 is the vehicle which strikes another vehicle with its front or, in a head-on collision, it is the vehicle on the wrong side of the road. If a third vehicle is impacted by either vehicle, it is designated Vehicle 3. Additional vehicles are numbered in sequence as they become involved in the accident.

Do not assign a number to any struck motor vehicle not in transport (e.g., a vehicle parked out of the roadway). A vehicle form is not to be completed for these vehicles; nor is a driver form to be completed. Any occupants they contain, including a person who was intent on driving the vehicle, are to be handled using the Pedestrian & Nonmotorist Form. However, the vehicle should be shown on the accident diagram and referred to as P-1, etc. Also, data which may be required to exercise the CRASH program is to be collected. The necessary data questions are located at the bottom of the second page of the Crash Program Summary.

A vehicle that sets an object in motion which strikes or is struck by another motor vehicle, prior to stabilization of the object, is vehicle number one. The other motor vehicle is numbered two.

Variable Name: Vehicle Role

Format: 1 column - numeric

Beginning
Column 14

Element Values:

- 1 Striking Unit
- 2 Struck Unit
- 3 Both striking and struck
- 4 Non-collision
- 9 Unknown

Remarks:

A vehicle must be in motion to be a striking vehicle. If the vehicle was not in motion, then it was struck. If a vehicle in motion contacts an object with its leading end and or side (including an object that was set in motion by another motor vehicle), then the vehicle is striking. Object in this last sentence includes ground as in the case of single vehicle motorcycle (V13="4)-49") accidents or vehicles which free fall, vault, etc.

If a vehicle in motion contacts another vehicle, pedestrian, or nonmotorist with its front, then the vehicle is striking. For example, in a head-on collision both vehicles are striking. If a vehicle is moving forward and is not in rotation and contacts another vehicle, pedestrian, or nonmotorist with other than its front (with one exception), then the vehicle is struck. The exception is for sideswiping vehicles. Both sideswiping vehicles are striking. Sideswiping includes front or rear endswipes.

For a vehicle to be both striking and struck it must sustain two impacts such that they did not occur with the same vehicle (e.g., side-slap), object, pedestrian, or nonmotorist. If the impacts occurred at the same location on this vehicle they must have occurred at different points in time in the accident sequence. The classical example of a vehicle which is both striking and struck is the chain reaction rear-end where the vehicle which is striking and struck is located within the chain.

Code "4" (Non-collision) only when the non-collision occurred first, even if subsequent impacts occurred. Non-collision includes overturned (except for motorcycles), fire/explosion, jackknifed, or immersion. A vehicle that sets an object (e.g., cargo, spewed gravel, etc.) in motion which strikes or is struck by another motor vehicle prior to stabilization of the object is coded as "4". The other motor vehicle (if in transport) is either a striking unit ("1") or a struck unit ("2") depending on whether or not the unit is in motion or stationary.

A vehicle that impacts an object and send that object into another vehicle or another vehicle's path is coded as "1" striking unit.

VEHICLE ROLE (V08)

OTHER VEHICLE/OBJECT/ Pedestrian or Nonmotorist	MOTOR VEHICLE UNDER CONSIDERATION (BEING INSPECTED)				NOT TRACKING (Significant yaw and/or Rotation) Contacts Its Leading End and/or Side ² is Contacted
	STATIONARY	CONTACTS ITS LEADING END (Back or Front)	CONTACT IS TO OTHER THAN ITS LEADING END ¹	SIDE/END SWIPING TYPE CONTACT	
VEHICLE IN MOTION	STATIONARY	CONTACTS ITS LEADING END (Back or Front)	CONTACT IS TO OTHER THAN ITS LEADING END ¹	SIDE/END SWIPING TYPE CONTACT	Other than its Leading End and/or Side ² is Contacted
OBJECT IN MOTION	STATIONARY	CONTACTS ITS LEADING END (Back or Front)	CONTACT IS TO OTHER THAN ITS LEADING END ¹	SIDE/END SWIPING TYPE CONTACT	Other than its Leading End and/or Side ² is Contacted
STATIONARY VEHICLE OR OBJECT	STATIONARY	CONTACTS ITS LEADING END (Back or Front)	CONTACT IS TO OTHER THAN ITS LEADING END ¹	SIDE/END SWIPING TYPE CONTACT	Other than its Leading End and/or Side ² is Contacted
PEDESTRIAN OR NON-MOTORIST	STATIONARY	CONTACTS ITS LEADING END (Back or Front)	CONTACT IS TO OTHER THAN ITS LEADING END ¹	SIDE/END SWIPING TYPE CONTACT	Other than its Leading End and/or Side ² is Contacted

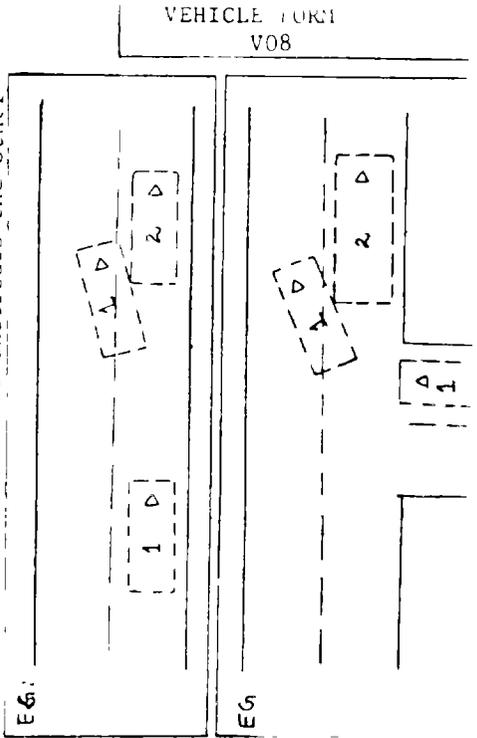
1. Leading End (Tracking): That end (Back or Front) of the vehicle under consideration which passes over a section of terrain before its opposite end.

2. Leading End and/or Side (Not Tracking): That end and/or side (Back, Front, Left or Right) of the vehicle under consideration which passes over a section of terrain before its opposite end and/or side.

3. Exception: Code "Striking" in those cases where the vehicle under consideration overtakes or undercuts the other vehicle/object/pedestrian or nonmotorist.

a. Overtaking: The vehicle under consideration is passing the other vehicle/object/pedestrian or nonmotorist and contacts the other vehicle/object/pedestrian or nonmotorist with its side.

b. Undercutting: The vehicle under consideration "cuts a corner" or turns in such a manner as to contact with its side the other vehicle/object/pedestrian or nonmotorist which is stationary or moving in the same general direction.



Variable Name: Police Indicated Manner of Leaving Scene

Format: 1 column - numeric

Beginning
Column 15

Element Values:

- 1 Driven
- 2 Towed
- 3 Abandoned
- 9 Unknown

Remarks:

This refers to the disposition of the vehicle at the accident scene.

The source of information for selecting an element value is the police report.

Code "2" (Towed) refers to any towing which is so indicated on the police report, independent of the reason for towing the vehicle.

Vehicles which are discovered later to have been towed by any means but which are not so reported on the police report are not to be coded "2" (towed). The investigator should still code this variable with the response which is consistent with his/her original understanding of the police report, prior to the acquisition of the additional information.

If the police report does not have a specific code which states abandoned, or its equivalent, but states the vehicle was "pushed to the side" of the trafficway or "left off roadway" where it came to rest, etc., it is to be coded as "3" (Abandoned).

There is a presumption that any indicated towing is from the accident scene. If the police report specifically states or implies directly that the towing occurred other than at the scene (e.g., subsequent arrest and impoundment of vehicle for leaving scene in vehicle), then code driven ("1"). If not, presume that the vehicle was towed from the scene.

VEHICLE FORM

V10

Variable Name: Vehicle Model Year

Format: 2 columns - numeric

Beginning
Column 16

Element Values:

Range: 50 through 80

Code the last two digits of the model year for which
the vehicle was manufactured

99 Unknown

Remarks:

A vehicle manufactured as a 1980 model is to be coded as
"80".

Variable Name: Vehicle Make

Format: 3 columns - numeric

Beginning
Column 18

Element Values:

Values are contained in an appendix to this manual

000 Unknown

Remarks:

Applicable Make/Model codes are contained in an appendix to this manual. The code is designed as five digits in length for each vehicle. Select the appropriate first three digits to code this variable. The two remaining digits will be used on the vehicle model variable (V12).

Please write the make of the vehicle on the available space for ready visual reference, even though the information is incorporated in the Make/Model code.

Code "000" for an unknown make.

Variable Name: Vehicle Model

Format: 2 columns - numeric

Beginning
Column 21

Element Values:

Values are contained in an appendix to this manual

00 Unknown

Remarks:

Applicable Make/Model codes are contained in an appendix to this manual. The code is designed as five digits in length for each vehicle. Select the appropriate fourth and fifth digits to code this variable. The first three digits were coded previously on the vehicle make variable (V11).

Please write the Model of the vehicle on the available space for ready visual reference, even though the information is incorporated in the Make/Model code.

Code "00" for an unknown model.

Disregard codes "68" through "72" on page 2 of the Make/Model Codes.

Variable Name: Vehicle Type

Format: 2 columns - numeric

Beginning
Column 23

Element Values:

Automobiles	22	Multi-unit truck or truck-tractor with two or more trailers
01 2-door passenger car	23	Truck-tractor only
02 4-door passenger car	29	Unknown truck type
03 Station wagon, excluding van or truck base		
04 Convertible		
05 On/off road vehicle (e.g., Jeep, Scout, Bronco, Blazer, etc.)	Buses	
06 Car, pickup body (e.g., El Camino, etc.)	31	School bus
08 Other type auto (specify)	32	Intercity bus
09 Unknown type automobile	33	Urban bus
	38	Other bus (specify)
	39	Unknown bus type
Trucks	Motorcycles	
11 Pickup	41	Motorcycle
12 Van (passenger, cargo van-based station wagon)	42	Mo-ped
13 Station wagon, truck based (e.g., I.H. Travelall, etc.)	48	Other (e.g., minibikes, motor scooters, sidecar cycle) (specify)
14 Single unit truck (10,000 lbs <G.V.W. 19,501 lbs)	49	Unknown type motorcycle
15 Single unit truck (19,500 lbs <G.V.W. 26,001 lbs)	Special Vehicles	
16 Single unit truck (G.V.W. >26,000 lbs)	51	Snowmobiles
19 Single unit truck (G.V.W. unknown)	52	Farm vehicles, except trucks
21 Two unit truck-tractor with semi-trailer or truck with cargo trailer	53	Dune or swamp buggies
	54	Construction equipment other than trucks
	55	Ambulance, emergency vehicle
	56	Large limousine - more than four doors
	57	Self-propelled campers and motor homes
	58	Fire trucks
	99	Unknown

Remarks:

Code "04" (Convertible) refers to automobiles with soft or removable hard shells which are considered to be "convertibles." A removable hardtop is one that can be removed without tools. Removable solid roof sections that were bolted

Variable: Vehicle Type (cont'd.)

on at the factory are considered standard roofs. Cars with sun roofs should be considered as having a standard roof. The position of the top at the time of the collision is not considered when coding the vehicle type.

Codes "12" and "13" (van; station wagon, truck based) are to be used in instances where these trucks are used as busses although not specifically designed for that purpose. It is permissible to consider these trucks as other motor vehicles while stratifying due to limited information on the police report, yet code them under trucks on this variable

Codes "31" through "39" refer to vehicles (excluding vans, truck based station wagons, etc.) which are *designed* to transport more than 10 persons.

Definition: D16.1-1976, section 2.2.11, page 6.

Code "31" (School bus) refers to vehicles which are specifically *designed* for and are used by a school corporation for the purpose of picking up or depositing children on a regularly scheduled routine (usually daily) and are so equipped for that purpose.

Code "32" (intercity bus) refers to busses having adjustable seat backs, only one normal entry-exit door, and used principally for intercity business.

Code "33" (Urban bus) refers to busses having fixed seatbacks, two normal entry-exit door systems and used principally for intra-city commuter business.

Code "38" (Other bus) refers to other busses such as those used for "Sunday" schools, school busses used for extra-curricular activities (not on a daily basis), etc. Identify the other bus types in the space available. This code should be used for busses which the investigator has identified and photographed but is uncertain as to whether to code them as "31" (School bus), "32" (Intercity bus), or "33" (Urban bus).

Code "39" (Unknown bus type) is used when the investigator has no information which would allow more specific classification in one of the bus codes.

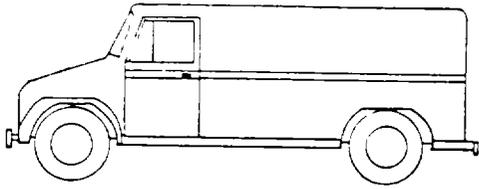
Code "53" (dune or swamp buggies) also can be used if an amphibious vehicle is encountered.

Code "54" excludes passenger vehicles which are owned/leased and operated by construction related firms. These should be assign codes "01" through "06" unless the vehicle has been modified, in which case, it should be coded "08". Construction related includes state or municipally owned road cleaning equipment, or utility related equipment where the model is essentially a special vehicle ("54"). However, some of these

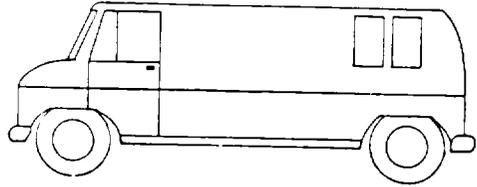
Variable: Vehicle Type (cont'd.)

vehicles are single unit trucks modified with the cleaning or repair equipment attached front or rear. In the latter case code single unit truck ("14", "15", "16", or "19").

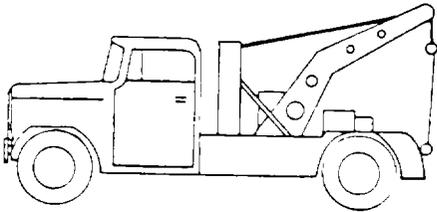
Codes "55", "56", and "58" include passenger vehicles, pick-ups, vans, and truck based station wagons which are used by police, ambulance, fire and volunteer fire departments.



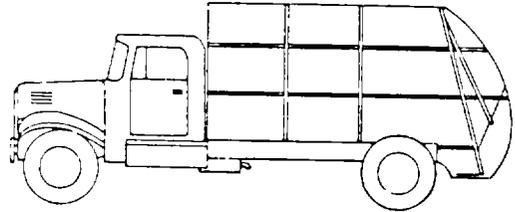
Panel Truck V13=13



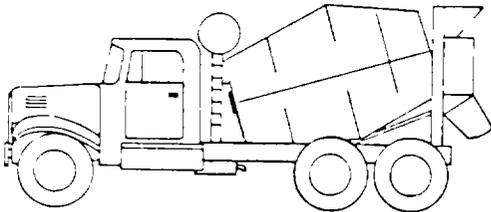
Van V13=12



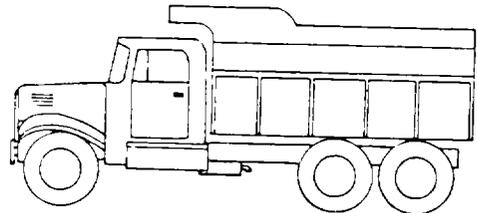
Tow Truck V13=14,15, or 19



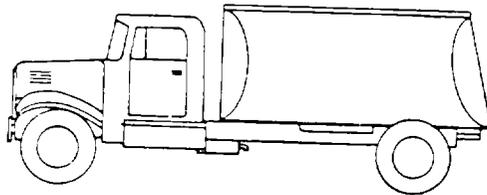
Refuge Truck V13=16



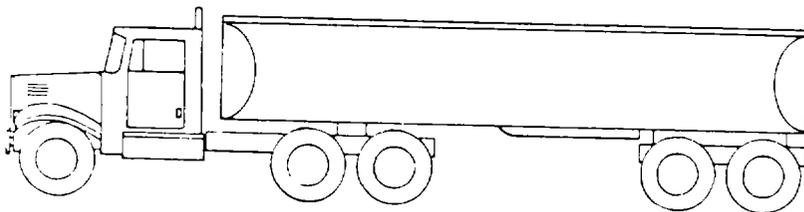
Mixer Truck V13=16



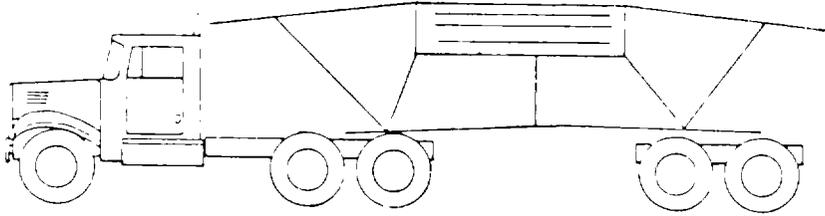
Dump Truck V13=14,15,16, or 19



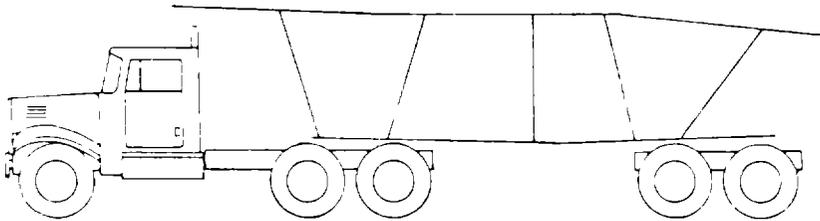
Straight Tank Truck V13=14,15,
16 or 19



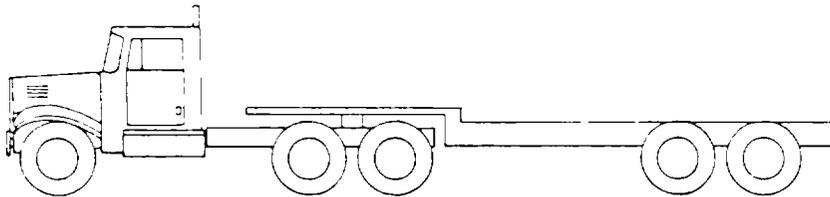
Semi-Trailer Tank Truck V13=21, V14=1



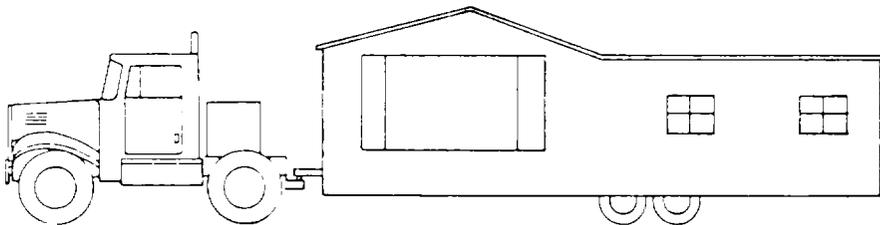
Auto Carrier V13=21, V14=1



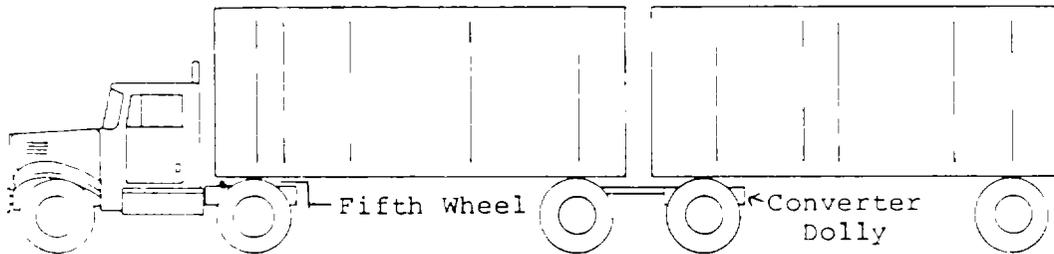
Auto Carrier V13=21, V14=1



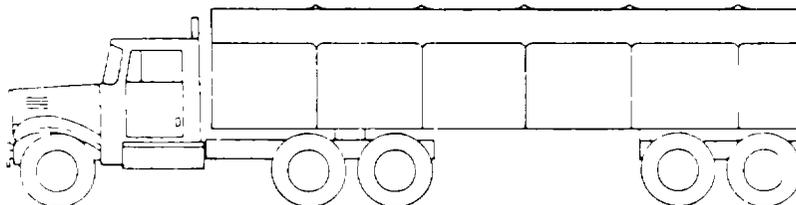
Lowboy V13=21, V14=1



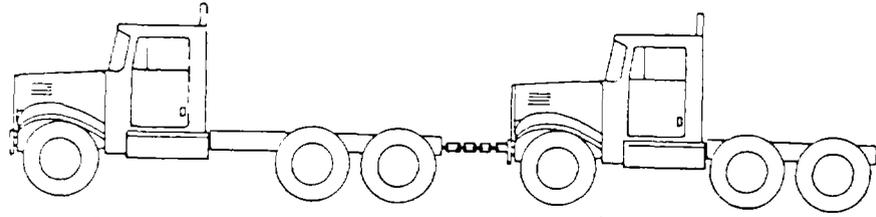
House Trailer V13=21, V14=1



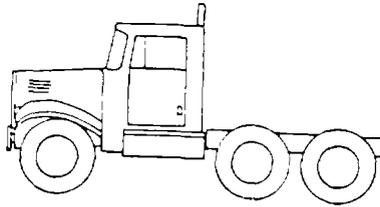
Double Bottom V13=22, V14=1



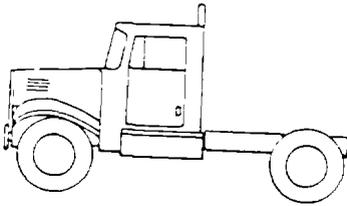
Open Top V13=21, V14=1



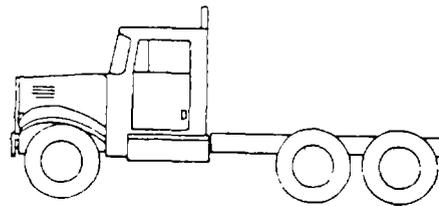
Truck Tractor Towaway V13=23, V14=7



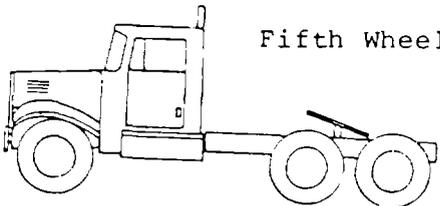
Truck Tractor V13=23, V14=1



Truck Tractor V13=23, V14=1

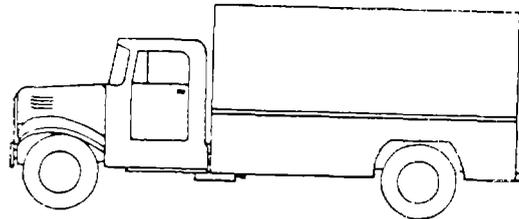


Truck Tractor V13=23, V14=1

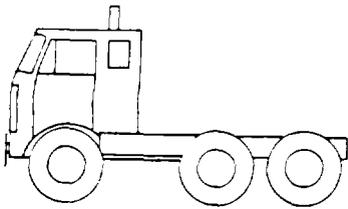


Fifth Wheel

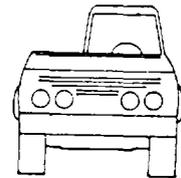
Truck Tractor V13=23, V14=1



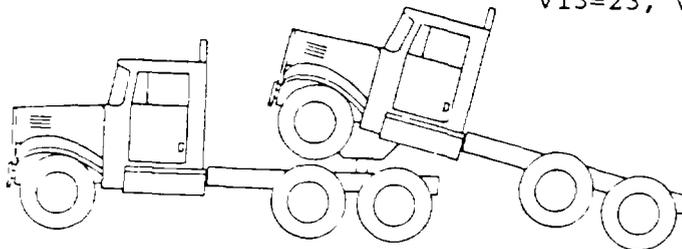
Enclosed Van-Single Unit Truck
V13=14,15,16, or 19, V14=1



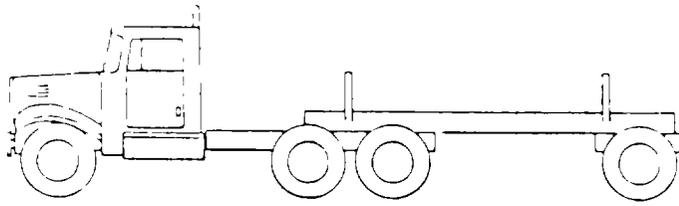
Truck Tractor V13=23, V14=1



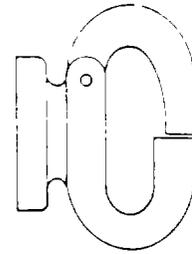
Truck Tractor
V13=23, V14=1



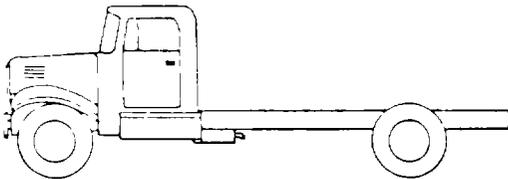
Truck Tractor Truckaway V13=23, V14=7



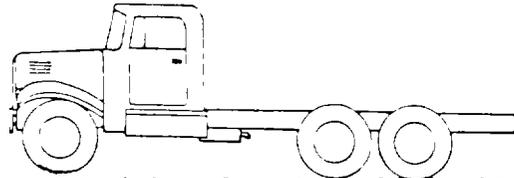
Pole Truck V13=21, V14=1



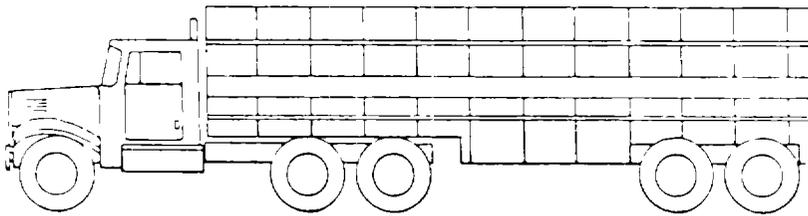
Pintle Hook



Straight Flat Bed V13=14,15,16,
or 19, V14=1



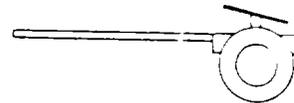
Straight Flat Bed V13=14,15,
16, or 19,
V14=1



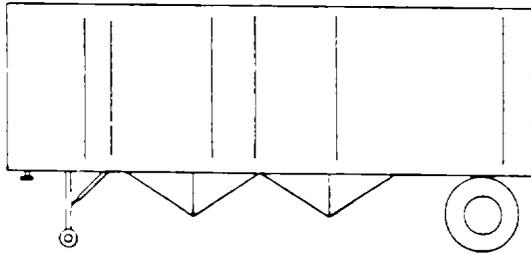
Live Stock Carrier V13=21, V14=1



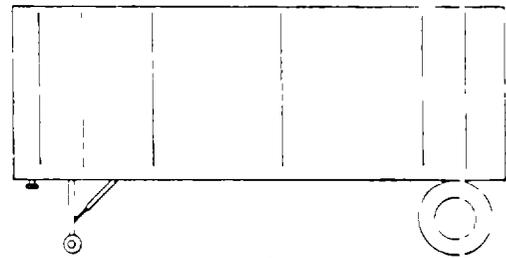
Flat Bed Semi-Trailer



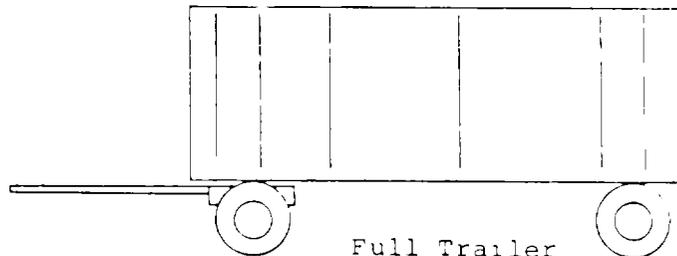
Converter Dolly



Dry Bulk Tank



Semi-Trailer



Full Trailer

Variable Name: Towed Trailing Unit

Format: 1 column - numeric

Beginning
Column 25

Element Values:

- 1 None
- 2 Travel trailer/camper
- 3 Other car trailer
- 4 Fifth wheel trailer
- 5 Truck trailer
- 6 Boat trailer
- 7 Other type unit (specify)
- 9 Unknown

Remarks:

Tractor-trailer combination and multi-unit trucks should be coded "1".

Code "3" (Other car trailer) includes horse trailers (other than those with fifth wheels), etc.

Code "4" (Fifth wheel trailer) refers mainly to cars or trucks pulling recreational vehicles with fifth wheels. It does not refer to truck tractors pulling trailers.

A fifth wheel is defined as a horizontal ring or segment of a ring, consisting of two bands which slide on each other, placed above the front axle of a carriage (trailer) and designed to support the forepart of the body while allowing it to turn freely in a horizontal plane.

Code "5" (Truck trailer) does not apply to multi-unit trucks or semi-trucks. It does apply to truck trailers being pulled by farm tractors, bulldozers, etc.

Motorcycles which are pulling another unit should be coded "7" (Other); however, this does not include sidecars.

INSTRUCTIONS FOR COMPLETION OF VEHICLE SKETCH

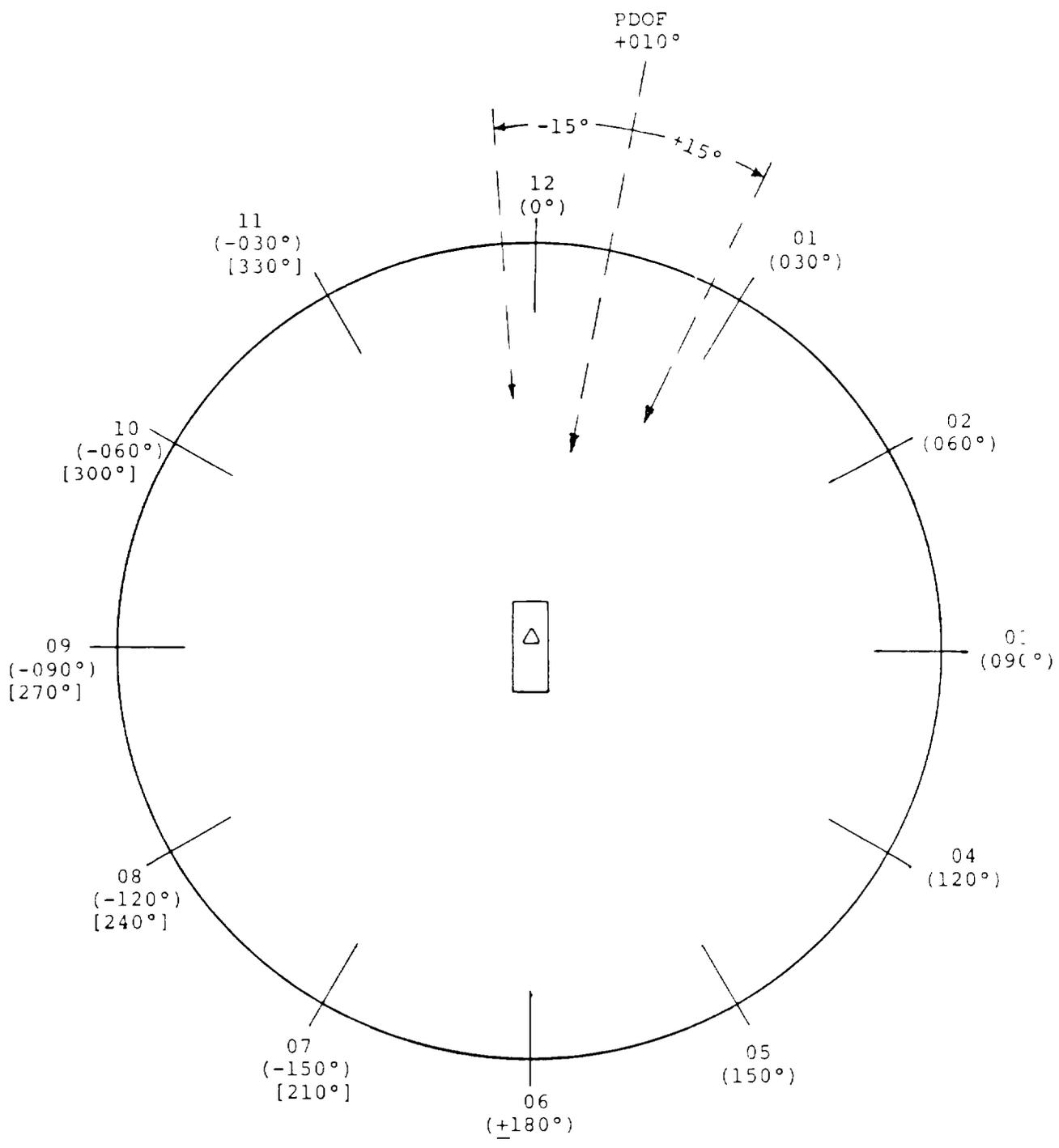
The investigator must keep in mind that all relevant data is not clearly recognized and encoded when the vehicle is inspected. Some information, of no apparent value at the time of the inspection, may be of great value in explaining vehicle or occupant phenomena in the subsequent reconstruction. For this reason, all scrapes, scratches, transfers, buckling and indications of engagement or relative motion must be annotated on this form. If there is insufficient room for this purpose, use a numerical coding scheme in which the numerals on the form (page 2) are keyed to the investigator's descriptive statements on the back of page 1.

An estimated CDC should be indicated for each impact (top of page 3). In this estimate write the direction of principal force in increments of ten degrees rather than in clock positions. Thus, if the direction appeared to be approximately ten degrees to the right of straight-ahead, indicate "010". If the direction of force appeared to be ten degrees left of straight-ahead, indicate "-010" ("350"). The final coding of the CDC at the bottom of page 3 reflects the direction of force in clock positions. So in the example where the principal direction of force (PDOF) is closest to ten degrees to the right of straight-ahead ("010"), it is interpreted that the true value is within ± 15 degrees ("005" ["155"] to "025"), and then the estimate is coded according to the clock direction (either 12 or 01 as determined by examining all available inputs to ensure accuracy for force assignments). If upon examining all the available inputs the investigator feels the PDOF is more likely to be within +015 to 025 and classifies the clock direction as "01", the top of page 3 should still reflect the original value "010".

When occasional differences which seem to be inconsistent (e.g., PDOF = 010° and clock position = 01) are encountered on page 3, they actually reflect the investigative methodology; therefore, they can be reconciled by reviewing the entire case and any CRASH output to determine if the difference is reasonable. This procedure allows the reviewer to appreciate what the investigator thought the PDOF (top of page 3) was, to the closest 10 degrees, based upon examination of that vehicle alone, while the clock position representing the force at the bottom of page 3 reflects the final determination after examining all sources (vehicles, objects contacted, scene evidence, CRASH program, etc.). In other words, it is not necessary for the force directions at the top and bottom of page 3 to be compatible; however, any force directions on the final CRASH output must be compatible with the force direction at the bottom of page 3.

CDC RELATED REMARKS

For fiberglass bodied vehicles (e.g., Corvettes), "C" measurements should be taken where the depths of penetration or crush can be determined. This usually occurs where structural supporting members for the fiberglass panels have been deformed. For the cases where the fiberglass panels are cracked and resume their original shape or where sections are completely broken away, "C" measurements are not applicable.



VEHICLE FORM

V15
V22

Variable Name: 1st C.D.C.-Object Contacted
2nd C.D.C.-Object Contacted

Format: 2 columns - numeric

Beginning
Columns 26
36

Element Values:

01 through 30 If the object contacted by the vehicle under consideration was another motor vehicle in transport, code the Vehicle Number assigned to that vehicle.

Collision with Stationary Object	Collision with Nonstationary Object
31 Motor vehicle not in transport	51 Animal
32 Tree (up to 50 cm circum.)	52 Trailer, disconnected in transport
33 Tree (over 50 cm circum.)	53 Train
34 Pole - fixed	59 Other nonstationary objects
35 Pole - breakaway--did break away	71 through 95
36 Pole - breakaway--did not break away	If the object contacted by the vehicle under consideration was a pedestrian or nonmotorist, add seventy (70) to the Pedestrian or Nonmotorist number, and code the resultant sum (e.g., 5+70=75)
37 Movable objects (post, fence, mail box, delineator, etc.)	97 Other object
38 Culvert, railroad tracks, curb	98 Not applicable
39 Abutment, retaining wall, bridge support	99 Unknown
40 Embankment	
41 Building, rigid	
42 Building, framed	
43 Bridge rail	
44 Guard rail	
45 Impact attenuator	
46 Ground	
47 Median barrier	
48 Train	
49 Other stationary objects	

Remarks:

This section is not to be completed until after the CRASH program is exercised except for those cases where: (1) the CRASH program is inapplicable, (2) the vehicle has sustained but one impact and there is insufficient data for a trajectory reconstruction to aid in the determination of force directions, or (3) the vehicle is outside the scope of CDC-SAE, J224a.

Variable Name: 1st C.D.C. - Direction of Force (cont'd.)
2nd C.D.C. - Direction of Force (cont'd.)

Rank order the above CDCs on the basis of the CRASH program results, if used.

If CRASH is exercised on none, or on no more than one CDC (where two or more exist), subjectively order the two most severe impacts (in terms of assumed change in velocity, delta "V").

If there is only one CDC, it should be entered in variables 16-21, whether or not CRASH was exercised. Variables 22-28 should then be recorded as "Not applicable" ("98" or "8").

9	8	8	8	8	8	8	8	9	8
25	27	28	29	30	31	32	33	34	35

If it is unknown whether the vehicle sustained a second impact, code variables 22-28 unknown ("99" or "9").

9	9	9	9	9	9	9	9	9	9
25	27	28	29	30	31	32	33	34	35

Code variables 15 and/or 22 with the appropriate code(s) when the object contacted is known regardless of how the CDCs, variables 16-21 or 23-28, are coded.

If CRASH can be exercised on only one CDC where two or more exist the CDC used in CRASH should be coded in variables 16-21 if it is felt to represent the highest change in velocity (delta "V"); it should be coded in variables 23-28 if it is felt to represent the second highest delta "V" and it should not be coded if it is felt to represent the third highest or lessor delta "V".

If the vehicle has previously been coded under Vehicle Type (V13) as "14" or greater (with the possible exception of codes "55", "56", or "58"--when they happen to be equivalent to a passenger vehicle, pickup, van, or truck based station wagon), row variables 16-21 and 23-28 are coded as not applicable ("98" or "8"). If the vehicle is one of the exceptions, it should be assigned a CDC and considered with respect to the above rules.

If no CDC has been recorded for a vehicle which has sustained but one impact, row variables 16-21 are coded as unknown ("99" or "9") and 22-28 are coded as not applicable ("98" or "8"). If no CDCs are recorded for a vehicle which has sustained more than one impact or an unknown number of impacts, row variables 16-21 and 23-28 are coded as unknown ("99" or "9"). If a vehicle has sustained two or more impacts and the only CDC which can

Variable Name: 1st C.D.C. - Direction of Force (cont'd.)
2nd C.D.C. - Direction of Force (cont'd.)

be generated (due to contamination from repair process which was underway at time of inspection, etc.) is for the second most severe impact, row variables 16-21 are coded as unknown ("99" or "9") and the generated CDC is coded in row variables 23-28.

No CDCs may be entered in row variables 16-21 or 23-28 unless those CDCs are known in their entirety, i.e., do not use "9" (unknown) for any missing character when that character is unknown. Conversely, any time a "9" is coded in any column for row variables 16-21 or 23-28, all other columns in that row must be coded "9" (unknown); however, variables 21 and 28 may be coded "09".

Verbal descriptions by themselves by drivers, occupants, or owners may not form the basis for a CDC except in very minor accidents where the other vehicle or object associated with the vehicle has been inspected and the investigator feels confident in generating the CDC for the vehicle with very minor damage. (Do not formulate "C" measurements for this vehicle.)

In some instances where the vehicle is undergoing repair (parts removed) or has been repaired (parts available) a CDC may be determined from those parts and a description of the damage from testimony of a repairman judged to be reliable. (Do not formulate "C" measurements for these vehicles unless there is only minor alteration which does not detract from the investigator's confidence in those measurements.)

The CDC generated for a particular impact is based upon damage which is the result of direct impact only; it does not include induced damage. All CDCs are based entirely upon the procedures in SAE, 224a.

For codes "32" and "33" measure the circumference of the tree on the horizontal plane at the point of impact. Note: a circumference of 50 cm. is approximately equivalent to 19 inches.

VEHICLE FORM

V18
V25

Variable Name: 1st C.D.C.-Specific Horizontal Location
2nd C.D.C.-Specific Horizontal Location

Format: 1 column - alphanumeric

Beginning
Columns 31
41

Element Values:

D Distributed--side or end
L Left--front or rear
C Center--front or rear
R Right--front or rear
F Side front--left or right
P Side center section--L or R
B Side rear--left or right
Y Side (F + P) or end (L + C)
Z Side (P + B) or end (C + R)
8 Not applicable
9 Unknown

Remarks:

See remarks section for variables V15 and V22

VEHICLE FORM

V19
V20

Variable Name: 1st C.D.C.-Specific Vertical Location
2nd C.D.C.-Specific Vertical Location

Format: 1 column - alphanumeric Beginning
Columns 32
42

Element Values:

A All
H Top of frame to top
E Everything below belt line
G Belt line and above
M Middle--top of frame to belt line or hood
L Low--top of frame, frame, and below
X Undercarriage
8 Not applicable
9 Unknown

Remarks:

See remarks section for variables V15 and V22

VEHICLE FORM

V20
V27

Variable Name: 1st C.D.C.-Type of Damage Distribution
2nd C.D.C.-Type of Damage Distribution

Format: 1 column - alphanumeric

Beginning
Columns 33
43

Element Values:

W Wide impact area
N Narrow impact area
S Sideswipe
O Rollover (includes side)
A Overhanging structure
E Corner
8 Not applicable
9 Unknown

Remarks:

See remarks section for variables V15 and V22

Variable Name: Documentation of More than Two CDCs

Format: 1 column - numeric

Beginning
Column 46

Element Values:

- 1 Yes
- 2 No
- 8 Not applicable
- 9 Unknown

Remarks:

Code "1" (Yes) when two CDCs are coded in row variables 16-21 and 23-28 and additional CDCs are reported at the top of page 3, Vehicle Form.

Code "2" (No) if the CDC is unknown, or when two CDCs are coded in row variables 16-21 and 23-28 and no other CDCs are formulated at the top of page 3, Vehicle Form.

Code "8" (Not applicable) for any vehicle outside the scope of the CDC-SAE, J224a.

Code "9" (Unknown) would be used whenever access to a vehicle to permit documentation of the CDC has not been possible. Since it has been recommended that investigators should be liberal in estimating CDCs for entry at the top of page 3, but should only make entries at the bottom of the page when in fact proper measurement of the CDC has occurred, it follows that if only a "rough estimate" has been entered at the top of page 3, then unknown ("9") is the appropriate entry for this variable.

Variable Name: Number of VIN Characters

Format: 2 columns - numeric

Beginning
Column 47

Element Values:

Range: 05 through 13

Code the actual number of alphanumeric characters which comprise the vehicle's VIN number.

99 Unknown

Remarks:

Code the actual number of alphanumeric characters which comprise the vehicle's VIN number as found on vehicle inspection (except as noted below).

Vehicles manufactured by the Ford Motor Company may begin and end their VIN with either a script "F" or a Roman "F". Do not count the script "F" when coding the number of characters; however do count Roman F's.

Code the police reported number of VIN characters, if available (and indicate police). Do so only when the vehicle was not inspected, and the police reported characters are consistent with reference materials (e.g., NATB) with respect to alphanumeric characters.

Code "99" if unknown.

Variable Name: Vehicle Identification Number

Format: 7 columns - alphanumeric

Beginning
Column 49

Element Values:

Code the seven left most alphanumeric characters.
9999999 Unknown
Left justify!

Remarks:

Code the seven left most alphanumeric characters as found on vehicle inspection. This is called left justification and is shown in the following example:

VIN: A3A197H118815
CODE: A3A197H

Code the police reported VIN, if available (and indicate police). Do so only when the vehicle is not inspected, and the police reported characters are consistent with reference materials (e.g., NATB) with respect to alphanumeric characters.

If the vehicle is manufactured by the Ford Motor Company and begins with a script "F", the "F" should not be coded. Proceed to the next character as in the example:

VIN: F3U62S100932F
CODE: 3U62S10

If part of the seven characters to be coded are missing or are not decipherable, enter "9" in the column any such character would ordinarily occupy.

If the entire VIN is less than seven characters, enter "8"s in the coding field until it is the proper length as in the example:

VIN: 4L32B
CODE: 4L32B88

If the entire VIN is unknown or missing, enter "9"s in the entire field.

Partial VINs should not be reconstructed based on knowledge of vehicle particulars (e.g., make, model, etc.).

Variable: Vehicle Identification Number (cont'd.)

The location of the VIN will vary among and within vehicles. Reference sources which may prove helpful in locating the VIN include, but are not limited to:

- 1) Motor Vehicle Identification Manual
National Automobile Theft Bureau
Palmer Publications Company
Downers Grove, Illinois 60515
- 2) Passenger Car and Truck-Accident Investigators
Manual
MVMA of the U.S., Inc.
320 New Center Building
Detroit, Michigan 48202

Note: For this variable only slash zeros "Ø" so that they are not confused with the alphabet character "0", as in DOT.

Variable Name: Registration of Vehicle

Format: 1 column - numeric

Beginning
Column 56

Element Values:

- 1 Not registered
- 2 In-state (at least)
- 3 Out-of-state (only)
- 4 Other registration (e.g., federal, foreign, military)
- 9 Unknown

Remarks:

Code "2" (In-state) means that the vehicle was registered in the state in which the accident occurred. The vehicle may or may not have also been registered in other states. The vehicle in the instance of tractor-trailer or multi-unit trucks includes the registration found for both the tractor and its trailer(s).

Code "3" (Out-of-state) means that the vehicle was registered, but not in the state in which the accident occurred. State-owned vehicles are coded "2" if the accident occurred in the same state in which the vehicle is registered.

The primary source is to see the vehicle's registration. Alternative sources are the vehicle's license plate and the police report.

Vehicles displaying dealer's tags are not registered ("1").

Expired registrations are not valid and are to be ignored when selecting the proper attribute.

Variable Name: Vehicle Special Use (this trip)

Format: 1 column - numeric

Beginning
Column 57

Element Values:

- 1 None
- 2 School related
- 3 Emergency related
- 9 Unknown

Remarks:

Code "2" (School related) refers to a vehicle that is *designed* for and used by a school corporation for the purpose of picking up or depositing children on a regularly scheduled routine (usually daily) and is so equipped for that purpose. The vehicle must be designed to transport more than 10 persons, and excludes vans, truck-based station wagons, etc.

For "2" to be coded, the vehicle must have been the type specified and must have been on its regularly scheduled routine at the time it was involved in the accident.

Code "3" (Emergency related) refers to a vehicle that is equipped with emergency flashers or siren and was using either or both at the time the accident occurred. Examples of vehicles included are: police, ambulance, fire, and volunteer fire units. Examples of vehicles excluded are: tow, telephone, and utility units.

Variable Name: Odometer Reading

Format: 3 columns - numeric

Beginning
Column 58

Element Values:

Range: 001 through 500

Code result to the nearest 1,000 miles

001 Less than 1,500 miles

997 Greater than or equal to 996,500 miles*

998 Not applicable

999 Unknown

Remarks:

Code to the nearest 1,000 miles as in the examples:

Mileage: 7,498
Code: 007

Mileage: 7,502
Code 008

Mileage: 18,342
Code 018

Mileage: 147,687
Code: 148

Code "001" if the mileage is less than 1,500.

Code "999" if the odometer was disconnected or broken
before the collision, or if the mileage is unknown.

* This value is not listed on the present forms but can be
written in if needed.

Variable Name: Passenger Compartment Integrity

Format: 2 columns - numeric

Beginning
Column 61

Element Values:

01 No integrity loss
Yes, integrity was lost through:
02 Windshield
03 Door
04 Roof
05 Windshield + door
06 Windshield + roof
07 Door + roof
08 Windshield, door + roof
98 Not applicable
99 Unknown

Remarks:

Consider the passenger compartment as a "package" which is designed to contain the occupant. If an opening occurs of sufficient magnitude through which an occupant could have been ejected totally or partially (although it is not necessary for an occupant to have been so ejected), the integrity of the compartment should be considered to have been lost. While it is difficult to define the magnitude of the opening in a universal manner, the minimum size of the opening would be equivalent to the head of most adults. Components which may lose their integrity are restricted to the windshield, door, or roof (individually or in combination).

Doors which open prior to an impact do not constitute loss of integrity, but those which open upon impact or from occupant or cargo loading due to the impact constitute loss of integrity.

Passenger cars which are "convertibles", having soft or removable hard tops, should not be coded as having lost the integrity of their roof if it is removed or in the down position.

Code "98" if the vehicle is not applicable (e.g., motorcycle, snowmobile, etc.).

Note: side or rear windows, whether fixed or movable, are excluded, even if shattered.

Variable Number: Passenger Compartment Intrusion

Format: 2 columns - numeric

Beginning
Column 63

Element Values:

- 01 None
- 02 Front, i.e., steering column, dash
- 03 Right side, i.e., door(s) with or without sill
override
- 04 Left side, i.e., door(s) with or without sill
override
- 05 Rear, i.e., trunk, rear seat intruded upon
- 06 Bottom, i.e., floor
- 07 Top, i.e., windshield, "A", "B", "C", or "D"
pillar(s), roof
- 08 Two or more areas
- 98 Not applicable
- 99 Unknown

Remarks:

Intrusion occurs only when components within the passenger compartment are physically changed as a result of the impact such that they assume a position more within the compartment. For example, a door which buckles outward does not necessarily constitute intrusion.

Since intrusion is restricted only to interior components or surfaces, it excludes cases where the external sheet metal is indented but the interior door panel is not changed.

Code "98" if the vehicle is not applicable (e.g., motorcycles).

Note: Code the area in terms of the most severe intrusion. Therefore, to have two or more areas (Code "08"), they must have the same amount of intrusion.

Note: Code "07" refers to the upper pillars (A, B, C, or D) being intruded upon, or those segments of the pillars above a horizontal plane through the bottom of the windshield.

Code "06" includes toe pan.

Variable Name: Magnitude of Intrusion

Format: 1 column - numeric

Beginning
Column 65

Element Values:

- 1 Less than five centimeters
- 2 Between five and fifteen centimeters
- 3 Greater than fifteen centimeters
- 8 Not applicable
- 9 Unknown

Remarks:

Code "1" if less than 5 cm (2 in).

Code "2" if between 5 and 15 cm (2-6 in).

Code "3" if greater than 15 cm (6 in).

Code "8" if the vehicle is not applicable (e.g., motorcycles),
or if there is no intrusion.

Variable Name: Fire Occurrence

Format: 1 column - numeric

Beginning
Column 66

Element Values:

- 1 No fire
- Yes, fire occurred
- 2 Started in vehicle, minor
- 3 Started in vehicle, major
- 4 Started external to vehicle, minor
- 5 Started external to vehicle, major
- 6 Origin unknown
- 9 Unknown occurrence

Remarks:

Code "2" (Started in vehicle, minor) refers to a fire which starts in the vehicle but consumes less than fifty percent of the passenger compartment.

Code "3" (Started in vehicle, major) refers to a fire which starts anywhere in the vehicle and consumes fifty percent or more of the passenger compartment.

Code "4" (Started external to vehicle, minor) refers to a fire which starts external to the vehicle but consumes less than fifty percent of the passenger compartment.

Code "5" (Started external to vehicle, major) refers to a fire which starts external to the vehicle but consumes fifty percent or more of the passenger compartment.

Code "6" (Origin unknown) if the origin of the fire is unknown, regardless of the extent of the fire.

Code "9" (unknown occurrence) if there is no vehicle inspection and no interviews of occupants, witnesses or other persons involved in the accident, including the investigating officer.

The occupant area of a motorcycle is equivalent to the passenger compartment of another vehicle.

Instructions for Completion of Restraint System Usage

Restraint usage recorded on page 5 of the vehicle form is based only on inspection of the vehicle; in other words, it is the recording of the evidence concerning restraint usage provided only by vehicle inspection.

An indication of restraint usage must be determined for every seating position in the vehicle regardless of the number of occupants in the vehicle. This "indication of usage" should represent "recent usage" rather than "usage ever" if at all possible. Look for such things as:

- * Belt/fittings damaged by occupant loading: deformed anchorages, stretched webbing, latch metal peening (loading impression on metal);
- * Placement of belts: on, behind, or under seatbacks or benches; and
- * Condition of belts: dirty, dust covered, mechanically unusable, knotted, size adjustment on fixed length belts, cut for convenience or comfort (out of the way, near housings), or cut for occupant extraction by emergency personnel (usually at an easily accessible position).

Restraint "usage in this accident" is not determined on the Vehicle Form. Vehicle evidence along with police report information, interviews, relationship of contact points to seat position given the PDOF applied to the vehicle, presence of belt-caused injuries, presence or absence of ejection, etc. are used for the final determination of restraint usage recorded on the Occupant Form.

Where recent usage is indicated code the type of restraint. Where belts have been used but it can not be determined whether or not the restraint was used recently (e.g. well worn belts and latches) code the type of restraint and annotate the reason for the code. If usage is not indicated code none ("1").

Indications of Ejection

If acquired information indicated that an occupant of a vehicle has been ejected but the vehicle cannot be inspected, do not complete the section entitled "Indication of Ejection". The information on this page can only be obtained through a visual inspection of the vehicle.

When a child safety seat exists in other than a normal seating position such as the floor behind the back seat, use the last column (Other Position or Unit) to code the presence and any indication of usage for that seat. If the child safety seat is in a normal position, make a diagonal line through each

Instructions for Completion of Restraint System Usage (cont'd.)

appropriate box and code data for the child safety seat in one half and for the normal seat position in the other half. Due to the transient nature of these seats one should key questions regarding its presence and usage at the time of the accident in the interview before making the final assessments on the occupant form.

Variable Name: Type of Most Severe Impact

Format: 2 columns - numeric

Beginning
Column 67

Element Values:

01	Head-on: with vehicle	
02	Rear-end: struck other vehicle	} Vehicle/Vehicle
03	Rear-end: struck by vehicle	
04	Angle: Striking other vehicle	
05	Angle: struck - left side	
06	Angle: struck - right side	
07	Sideswipe, endswipe, and very narrow impact frontal	} Vehicle/Vehicle or Vehicle/Object
08	Front impact with object	} Vehicle/Object
09	Side impact with object	
10	Rear impact with object	
11	Impact with pedestrian or nonmotorist	
12	Other impact (specify)	} Vehicle/Vehicle or Vehicle/Object
98	Not applicable	
99	Unknown	

Remarks:

The response is based on CDC (variables 16-21) or if it is a non-applicable vehicle it is based on the direction of force and the general area of damage from the most severe impact.

The code "01" (Head-on: with vehicle) should only be coded where motor vehicles contact each other front-to-front, in a traditional head-on collision mode (see examples at end of variable for further clarification on specific clock directions).

Code "07" (Sideswipe, endswipe, and very narrow impact frontal [restricted to vehicle/vehicle collision only]) refers to an impact where the primary direction of force and the overlap between the vehicle and another vehicle or object is such that there is minimal side engagement of the two vehicles traveling in the same or opposite directions, or between the vehicle and the object. The resulting damage is primarily restricted to sheet metal involvement with no significant structural engagement (i.e., no frame or A, B, C, D, etc., pillar engagement which halts the sideswipe). This also applies to both front and rear endswipes. (Note: See examples at end of variable for further clarification). Most severe impacts between vehicles and objects which are sideswipes or endswipes, take precedence over "08", "9", and "10".

The most severe impact in multiple impacts is determined as follows:

- 1) Select the impact which has the highest Delta V-- given that the CRASH program has been exercised

Variable Name: Type of Most Severe Impact (cont'd.)

for all of the impacts.

- 2) If the highest Delta V is not quantifiable because the CRASH program has not been exercised for all impacts, select the impact which involved the greatest penetration over the widest area and has a force which is directed closest to the center of gravity.

Codes "08" through "10" exclude ground but include element values "31" through "45" and "47" through "59" for variables V15 and V22.

If a rollover or jackknife occurred second or subsequent in the collision sequence yet was the most severe, then code "12" (Other impact) for the most severe impact. If a non-horizontal impact (other than rollover) is the most severe, then code "12". Some horizontal impacts (other than jackknife) can be coded as "12" if they were the most severe and don't fit any of the codes "01-11". One such instance involves the case when the subject vehicle backs into another vehicle. Code "12" also includes a vehicle which backs into another vehicle and any example not specifically detailed below.

Code "12" when the most severe impact for a motorcycle results from contact with the ground.

Code "98" (Not applicable [Non-Collision]) if a non-collision was the most severe impact and occurred first.

Code "99" (Unknown) if unknown.

The first CDC which is entered in row variables V15-V21 is specifically related to the element value chosen for this variable.

The information reported in this variable is specific to the individual vehicle being considered. Consider the following example. V-1 sideswipes V-2; next, V-2 impacts a tree head-on causing 24 inches of penetration. Finally, V-1 strikes and fatally injures a pedestrian but sustains insignificant damage. The most severe impact that should be recorded for V-1 is the sideswipe ("07"). For V-2, code "08" (Front impact with object) should be recorded.

MAPPING OF FIRST HARMFUL EVENT TO MOST SEVERE IMPACT

FIRST HARMFUL EVENT (A12)

Head-On:

One (11,12,01) F *
 Other (11,12,01)F *

Rear:

One (03,04,05,06,07,08,09)B *
 Other - - - - *

Angle:

One (09,10,11,12,01,02,03)F *
 Other (09,10,02,03) F *

or

One (06,07,08,09,10,11,12)L *
 Other - (F,L,R) - *

MOST SEVERE IMPACT (V39)

Head-On:

This (11,12,01) F *
 Other (11,12,01)F *

Rear-Striking:

This *
 Other (03,04,05,06,07,08,09)B *

Rear-Struck:

This (03,04,05,06,07,08,09)B *
 Other - - - - *

Angle-Striking:

This (09,10,11,12,01,02,03)F *
 Other (09,10,02,03) F *

or

This (09,10,02,03) F *
 Other (09,10,11,12,01,02,03)F *

or

This (10,11,12,01,02) (F,L,R) *
 Other - (L,R) - *

Angle-Struck - Left Side:

This (06,07,08,09,10,11,12)L *
 Other - (F,L,R) - *

MAPPING OF FIRST HARMFUL EVENT TO MOST SEVERE IMPACT (cont.)

FIRST HARMFUL EVENT (A12)

or

MOST SEVERE IMPACT (V39)

Angle-Struck - Right Side

One (12,01,02,03,04,05,06)R *
 Other _ _ (F,L,R) _ _ *

This (12,01,02,03,04,05,06)R *
 Other _ _ (F,L,R) _ _ *

Side-Endswipe/narrow Frontal
Narrow Frontal

One _ _ F _ (E+)
 Other _ _ F _ (L,S) _

Side-Endswipe/narrow Frontal
Narrow Frontal

One _ _ F _ (E+)
 Other _ _ F _ (L,S) _

Side-Endswipe

One _ _ (F,L,R,B) _ _ S _
 Other _ _ _ _ _ _ _ _

Side-Endswipe

One _ _ (F,L,R,B) _ _ S _
 Other _ _ _ _ _ _ _ _

"*" Excludes all sideswipes, endswipes (S) and those narrow frontals which are to be coded under Side-Endswipe/Narrow Frontal.

"+" Includes only those frontal impacts which have an 'E' in this column if the following conditions are met: (1) both vehicles must have CDC's which are F _ _ (E,S) _ _ and (2) the masses of the vehicles acting in opposition to each other have little effect because of the "sideswiping" action. In other words, this modification allows the analyst to segregate those collisions in which both the vehicles have 11-1 o'clock force directions with front-to-front contact but which are of a sideswiping variety from those which have the same force directions and frontal plane damage but are of a more severe nature.

Variable Name: Rollover Involvement

Format: 1 column - numeric

Beginning
Column 69

Element Values:

- 1 Yes
- 2 No
- 9 Unknown

Remarks:

Rollover is defined as any vehicle rotation of 90 degrees or more, about any true horizontal axis. Rollover can occur at any time during the collision and is coded independently of other configuration questions. If a trailer, attached to the case vehicle, rolled over but the vehicle itself did not, the variable should be coded "2" (No).

Variable Name: Jackknife Involvement

Format: 1 column - numeric

Beginning
Column 70

Element Values:

- 1 Yes
- 2 No
- 9 Unknown

Remarks:

Jackknife can occur at any time during the collision. The phenomenon called "jackknife" is not restricted to truck-tractor vehicles; it may occur with any passenger vehicle, van, motorcycle, etc. which is pulling a trailing unit, and the trailing unit and the pulling vehicle are capable of rotating (articulating) with respect to each other.

Code "1" (Yes) when there is either sufficient rotation (articulation) between the trailing unit (which includes another vehicle) and the pulling vehicle to come in contact with each other and leave any visible damage (irrespective of the magnitude of the damage), or the rotation was ninety (90) degrees or more.

Vehicles coded on variable V14 (Towed Trailing Unit) as "1" (None) are to be coded "2" (No) here, unless they were previously coded as "21" (Two unit truck-tractor with semi-trailer or truck with cargo trailer), "22" (Multi-unit truck or truck-tractor with two or more trailers), or "29" (Unknown truck type) on variable V13 (Vehicle Type).

Variable Name: Submission of Potential Safety Problem Bulletin

Format: 1 column - numeric

Beginning
Column 71

Element Values:

- 1 Yes
- 2 No
- 9 Unknown

Remarks:

All teams will be provided with bulletins (forms) to report any potential vehicle safety problems which they encounter. Code "1" (Yes) if a bulletin is submitted.

Code "2" (No) when the Vehicle Type (V13) is known and no potential safety problem bulletin was submitted. Use code "9" (Unknown) whenever the Vehicle Type (V13) is unknown ("99").

Submit this bulletin to Mr. Vernon Roberts at NHSTA. It has been requested that each team be placed on the mailing list for reports of active defect investigations. Teams should become familiar with current investigations and be on the lookout for accidents which are relevant to these; although, other defects or vehicle problems encountered are also of interest and should be reported.



POTENTIAL SAFETY PROBLEM BULLETIN

REPORTING DATE _____

SEND TO Vernon Forents, Transpoint Building, Room 3404,
2100 2nd Street, S.W. - Washington, D.C. 20590

SUBJECT: _____

IDENTIFICATION

TEAM _____ CASE NO. _____ ACCIDENT DATE _____

ACCIDENT LOCATION _____

INVESTIGATING POLICE AGENCY _____

VEHICLE MODEL YEAR _____ MAKE/MODEL _____

VIA _____ ODCM _____

ACCIDENT DESCRIPTION (include police report)

(continue on back)

ITEM DESCRIPTION (include hardware and photographs if possible)

(continue on back)

Variable Name: Vehicle Curb Weight

Format: 3 columns - numeric

Beginning
Column 72

Element Values:

Range: 001 through 500
Code recorded weight to the nearest 100 pounds.
001 Less than 150 pounds
997 99,650 lbs or more
999 Unknown

Remarks:

Code to nearest 100 pounds as in the examples:

Weight: 180 lbs.
Code: 002

Weight: 3,230 lbs.
Code: 032

Weight: 16,500 lbs.
Code: 165

Code "001" if the weight is less than 150 lbs.

Do not confuse the rated Gross Vehicle Weight (GVW) with the curb weight since it is likely to be significantly greater than the curb weight.

The weight of the trailer (exclusive of cargo) is counted with the vehicle curb weight if variable V13 (Vehicle Type) is coded as "21" or "22". The weight of the cargo contained within or on the trailer(s) as well as in the tractor is coded under variable V44 (Vehicle Cargo Weight).

If variable V14 is coded other than "1" (i.e., so as to exclude tractor-trailer combinations), the weight of the trailer and its cargo is not coded here. Instead, it is coded under variable V44 (Vehicle Cargo Weight). For example, the weight of a boat trailer and its cargo are coded as vehicle cargo weight (V44), distinct from the weight of the vehicle.

Variable: Vehicle Curb Weight (cont'd.)

Code "999" if the weight is unknown.

The weight for many passenger vehicles, both domestic and foreign, are included in an appendix to this manual. Additional reference sources which may prove helpful include, but are not limited to:

- 1) Branham Automobile Reference Book
(Year Round Service, Paper)
Branham Publishing Co.
P.O. Box 1948
Santa Monica, CA 90406
- 2) Branham Motorcycle and Snowmobile Booklet
Same Address
- 3) Passenger Car and Truck Accident
Investigators Manual
MVMA of the U.S., Inc.
320 New Center Building
Detroit, MI 48202

Variable Name: Vehicle Cargo Weight

Format: 3 columns - numeric

Beginning
Column 75

Element Values:

Range 001 through 500
Code weight to the nearest 100 pounds.
000 Less than 50 pounds
997 99,650 lbs or more
999 Unknown

Remarks:

Code to the nearest 100 pounds as in the examples:

Weight: 180 lbs.
Code 002

Weight: 3,230 lbs.
Code: 032

Weight: 16,500 lbs.
Code: 165

Code "001" if the weight is less than 150 lbs.

Do not include the weight of the occupants in the cargo weight. The weight represented by the occupants will be included as a component (along with cargo and vehicle curb weight) of the single value which represents the vehicles combined weight on the CRASH program summary form, if used.

The weight of the cargo contained within or on the trailer(s) as well as in the tractor for vehicles coded "21" or "22" on variable V13 (Vehicle Type) is coded here. This is exclusive of the weight of the trailer(s) by themselves.

If variable V14 is coded other than "1" (i.e., so as to exclude tractor trailer combinations), the weight of the trailer and its cargo (if known) is coded here.

Code "997" if the cargo weight is 99,650 lbs or more.

Code "999" if cargo weight is unknown.

Variable Name: Investigator Reported Source of Cargo Weight

Format: 1 column - numeric

Beginning
Column 78

Element Values:

- 1 No cargo
- 2 Measured
- 3 Estimated
- 4 Rated capacity
- 9 Unknown: source or weight

Remarks:

Self-explanatory .

CRASH PROGRAM

Two options or methods for calculating the Delta V are available in the CRASH program.

DAMAGE ALGORITHM

In this method the damage profile and direction of principal force for each vehicle are used to estimate the Delta V. In the absence of an exact profile the CDC itself will be utilized by the program. When the vehicles have been inspected it is important to utilize the "nearest 10-degree" estimate of force direction rather than only relying on the o'clock sector definition for CDC.

TRAJECTORY ALGORITHM

In this method the evidence from the scene as well as vehicle damage data is utilized to estimate Delta V. The scene evidence of trajectory will in fact predict impact speed as well as Delta V. The scene data may be uncertain in many cases. For example, the friction coefficient on a wet road may be uncertain. The precise location of final rest and impact positions may be uncertain. The path between impact and final rest may be uncertain. The uncertainty associated with such evidence grows as the time between the accident and the time of scene inspection increases. The investigator should not dismay for even a live scene contains ambiguities concerning impact position and trajectory. Even the final rest position may be confused by action of the police in moving the vehicles to clear traffic congestion. For all these reasons, the trajectory option will be exercised less often than the damage option.

RECONCILIATION OF DIFFERENT RESULTS BETWEEN DAMAGE AND TRAJECTORY

When evidence from the scene and the vehicle is present, the execution of CRASH will produce two independent estimates of Delta V. The two results will seldom be precisely equal. What is a significant difference, and what action should the investigator take in the face of a significant difference?

Experience indicates that satisfactory agreement exists between the two estimates when the directions of Delta V are colinear and their total Delta V component magnitude differs by no more than 4 kph or 10 percent, whichever is greater. When the agreement is not satisfactory, the data associated with each option should be reviewed for accuracy.

Possible sources of error include:

Vehicle damage. Review the crush measurements and ensure they are consistent with the damage photos. Review the wheel and tire conditions to ensure they reflect the best estimates of their contribution to steering and drag.

Scene evidence. Review the impact and rest positions and the trajectory path. Review the surface coefficient of friction.

After reviewing these sources, subsequent runs should be made if adjustments to the input are rational. ADJUSTMENTS SHOULD NOT BE MADE WITHOUT BASIS FOR UNCERTAINTY IN THE ADJUSTED VARIABLES. If agreement cannot be reached between the two methods, the case should be flagged for special review by the Zone Center, who will then complete variables V46 through V49.

Investigators will find it convenient when uncertainty exists in some variables, such as friction coefficient and other scene evidence, to identify the range of rational error that may exist before initiating a CRASH run.

If agreement does not occur, the REPUN execution on the CRASH program can then be initiated at a considerable savings in time devoted to changing the input variables.

In any case when both options, DAMAGE and TRAJECTORY, have been executed and agreement has been obtained, the two results for Delta V should be averaged after making the force direction colinear and this averaged value entered in V46 through V48.

Variable Name: Crash Severity-Total Delta V

Format: 3 columns - numeric

Beginning
Column 79

Element Values:

Range: 000 through 120
Nearest k.p.h.
000 Less than 0.5 k.p.h.
999 Unknown

Remarks:

Complete CRASH runs (where applicable) for all impacts in the accident. The results may then be used to classify the corresponding CDCs as highest, secondary, or neither for variables V15-V28 of the Vehicle Form. If a CDC is entered in row variables V15-V21 and it was used in exercising the CRASH program, code the Total Delta V as shown in the results.

If the CDC associated with CRASH was only entered in row variables V22-V28 (secondary) enter the Total Delta V as shown in the results on the space available in the secondary column of this variable. The value is entered but this variable is coded as "999" (unknown).

If neither the highest nor the secondary CDC entered in row variables V15-V21 or row variables V22-V28 was used in exercising the CRASH program, code the present variable as "999" (unknown).

To convert miles to kilometers, multiply miles times 1.61.
For example, 18 m.p.h. x 1.61 = 29.0 k.p.h.

Variable Name: Crash Severity-
Longitudinal Component Delta V

Format: 4 columns - numeric

Beginning
Column 82

Element Values:

Range: - 120 k.p.h. through + 120 k.p.h.
Nearest k.p.h.
_000 Greater than -0.5 and less than 0.5 k.p.h.
_999 Unknown

Remarks:

Complete CRASH runs (where applicable) for all impacts in the accident. The results may then be used to classify the corresponding CDCs as highest, secondary or neither for variables V15-V28 of the Vehicle Form. If a CDC is entered in row variables V15-V21 (highest) and it was used in exercising the CRASH program, code the Longitudinal Component of Delta V as shown in the results.

If the CDC is only entered in row variables V22-V28 (secondary) enter the Longitudinal Component of Delta V as shown in the results on the space available in the secondary column of this variable. The value is entered but unknown ("999") is coded.

If neither the highest nor the secondary CDC entered in row variables V15-V21 or row variables V22-V28 was used in exercising the CRASH program, code the present variable as "999" (unknown).

Variable Name: Crash Severity-Lateral Component Delta V

Format: 4 columns - numeric

Beginning
Column 86

Element Values:

Range: - 120 k.p.h. through + 120 k.p.h.
Nearest k.p.h.
_000 Greater than -0.5 and less than 0.5 k.p.h.
_999 Unknown

Remarks:

Complete CRASH runs (where applicable) for all impacts in the accident. The results may then be used to classify the corresponding CDCs as highest, secondary, or neither for row variables V15-V28 of the Vehicle Form. If a CDC is entered in row variables V15-V21 (highest) and it was used in exercising the CRASH program, code the Lateral Component of Delta V as shown in the results.

If the CDC is only entered in row variables V22-V28 (secondary), enter the Lateral Component of Delta V as shown in the results on the space available in the secondary column of this variable. The value is entered but unknown ("999") is coded

If neither the highest nor the secondary CDC entered in row variables V15-V21 or row variables V22-V28 was used in exercising the CRASH program, code the present variable as "999" (unknown).

Variable Name: Crash Severity-Energy Absorption

Format: 4 columns - numeric

Beginning
Column 90

Element Values:

Range: 0000 through 5000 nt·m
Nearest 100 newton meters (joules)
0000 Less than 50 newton meters
9997 999,650 newton meters or more
9999 Unknown

Remarks:

Complete CRASH runs (where applicable) for all impacts in the accident. The results may then be used to classify the corresponding CDCs as highest, secondary, or neither for variables V15-V28 of the vehicle form. If a CDC is entered in row variables V15-V21 (highest) and it was used in exercising the CRASH program, code the Energy Absorbed as shown in the results.

If the CDC is only entered in row variables V22-V28 (secondary), enter the Energy Absorbed as shown in the results on the space available in the secondary column of this variable. The value is entered but unknown ("9999") is coded.

If neither the highest nor the secondary CDC entered in row variables V15-V21 or row variables V22-V28 was used in exercising the CRASH program, code the present variable as "9999" (unknown). This also includes vehicles which were not inspected.

To convert foot-pounds to newton meters, multiply by 1.356
For example, 14631.3 ft-lbs. x 1.356 = 19840 nt·m.

The value is then reported to the nearest 100 newton meters. In the above example it would be "0198".

If the CRASH program is exercised in the english version and the amount of energy absorbed exceeds 737,462 ft-lbs, code "9997".

If the CRASH program is exercised in the metric version and the amount of energy absorbed exceeds 999,999 nt·m, the output will appear as "****", code 9997. In this case, rerun the program using the english version to get the actual amount of energy absorbed since ft-lbs are 1,356 times as great as equivalent n.mt. The english version should indicate that the amount of energy absorbed is greater than 737,462 ft-lbs.

Variable Name: Estimated Travel Speed

Format: 2 columns - numeric

Beginning
Column 94

Element Values:

Range: 00 through 97
Nearest m.p.h.
00 Stopped.
97 97 m.p.h. or higher
99 Unknown

Remarks:

Code the travel speed for this vehicle if indicated on the police report by the investigating officer. Do not use estimates by drivers or witnesses.

Code to the nearest m.p.h. as in the examples:

Reported speed: 40 mph
Code: 40

Reported Speed: 40.2 mph
Code: 40

Reported Speed: 40.5 mph
Code: 41

Code "00" if stopped.

Code "97" if 97 or greater.

Code "99" if the estimated travel speed is unknown.

If the travel speed is reported as a range, code the average. For example, if reported as 55-60 m.p.h., code "58".

DRIVER FORM

D06

Variable Name: Vehicle Number

Format: 2 columns - numeric

Beginning
Column 10

Element Values:

Range: 01 through 30

Remarks:

The Vehicle Form requires that a Driver Form be completed;
the value coded here must be the same as that coded for
the vehicle in which this driver is associated.

Variable Name: Number of Occupants This Motor Vehicle

Format: 2 columns - numeric

Beginning
Column 12

Element Values:

Range: 00 through 50
99 Unknown

Remarks:

This variable tells the system how many occupants (including the driver) were present in this driver's vehicle. If the actual number present is unknown, then "99" should be coded. May be completed based on data from someone other than driver.

Variable Name: Driver Presence in Vehicle

Format: 2 columns - numeric

Beginning
Column 14

Element Values:

- 1 Yes
- 2 No

Remarks:

This variable serves as a flag to identify driverless motor vehicles in transport. If no driver was physically in the vehicle at the time it was struck, then no ("2") should be coded. In addition, variables V09 through V29 should be coded not applicable ("8" or "98"). If no driver was present, then no Occupant Form for this driver is required. On the other hand, a code of "1" implies that an Occupant Form will be present for this driver.

If this motor vehicle was a "hit and run" vehicle as defined on the Accident Form (A17), then the driver was present ("1").

Variable Name: Months Driving Experience This Class of Vehicle

Format: 2 columns - numeric

Beginning
Column 15

Element Values:

Range: 01 through 61

Code actual months of previous driving experience up to 60

61 Greater than five years

98 Not applicable

99 Unknown

Remarks:

This variable is used to report a driver's previous driving experience in the class of vehicle the driver was operating at the time of the accident. Class of vehicle refers to general vehicle types, i.e., passenger car, light truck, straight truck, truck-tractor, bus, motorcycle, or special vehicle. These categorizations are not necessarily mutually exclusive. For example, a police officer (special vehicle) involved in an accident while driving an emergency vehicle which in fact is a four-door sedan similar to the personal car that the officer drives would be an instance where the investigator must not consider the special vehicle as a different class from the officer's other driving experience. A professional truck driver involved in an accident in the driver's personal passenger car certainly would be different. Not applicable indicates no driver present.

The class of the vehicle is the sole criterion for this variable, attached trailers, additional cargo, etc., have no affect in the assessment.

Variable Name: Estimated Mileage This Vehicle

Format: 3 columns - numeric

Beginning
Column 17

Element Values:

Range: 001 through 997
Miles to the nearest 100

001 Less than 150 miles
997 99,650 miles or more
998 Not applicable
999 Unknown

Remarks:

This vehicle refers to the vehicle in the accident. The intent is to measure the driver's cumulative driving experience for the specific vehicle being driven at the time of the accident. For example, if a person drove various standard passenger vehicles over a period of five years so as to accumulate approximately 60,000 total miles, but was involved in an accident while driving another standard passenger vehicle for the first time, the total estimated mileage this vehicle would only be equal to the mileage accumulated during the trip in which the accident occurred and excludes any subsequent mileage.

Not applicable ("998") indicates no driver present.

Variable Name: Purpose of Trip

Format: 2 columns - numeric

Beginning
Column 20

Element Values:

01	To place of work	14	Vacation
02	Work-related business	15	Change of vehicle without change of mode
03	Convention	16	Change means of transportation
04	Civic/educational/religious	17	Pick up or leave off passengers
05	Eat meal	18	Return home
06	Medical or dental	19	Lodging (overnight)
07	Shopping	20	Other social (specify)
08	Family or personal business	21	Other purpose (specify)
09	Visit friends or relatives	98	Not applicable
10	Pleasure driving	99	Unknown
11	Sightseeing		
12	Entertainment		
13	Recreation (participant)		

Remarks:

* Trip is defined as "any travel from one address (place) to another by private motor vehicle, public transportation, pedalcycle, or on foot."

Travel to place of work--includes travel to a place where one reports for work. Does not include any other work-related travel.

Work-related business--trips related to business activities except to the place of work; for example, a plumber drives to a wholesale dealer to purchase supplies for use in his business, a company executive travels from his office to another firm to attend a business meeting.

Convention--trips made to attend business, professional, special interest and other types of conventions (for example, Shriners', American Legion, etc.).

Civic/Educational/Religious--trips to political rallies, legislative hearings, voting places, etc.; to school, college or university for class(es), to attend PTA meetings, attend seminars, etc.; to church services or to participate in other religious activities. Do not include in this category social activities which take place at a church or school but cannot be classified as religious or educational.

Variable: Purpose of Trip (cont'd.)

Eat Meal--trips taken to eat a meal in a public place. Does not include trips to a friend's home for dinner. These trips should be coded as "visit friends or relatives".

Doctor or Dentist--trips made for medical, dental or psychiatric treatment or other related professional services.

Shopping--includes "window-shopping" and purchase of commodities such as groceries, furniture, textiles, medicines, etc., for use or consumption elsewhere.

Family or Personal Business--trips taken to attend organized functions of the family or friends, such as weddings, anniversaries, graduations, reunions and funerals; or because of illness or other emergency in the family or among friends. Includes trips taken to settle the family estate, sell family or personal property, look for a new residence, etc. Includes the purchase of services such as cleaning garments, servicing of an automobile, beauty parlor treatments, banking, legal services, etc.

Visit friends or relatives--trips made to visit friends or relatives but not prompted by organized family affairs or an emergency.

Pleasure driving--includes driving trips made with no other purpose listed here but to "go for a drive" (which may or may not have a destination); for example, a Sunday drive in the country.

Sightseeing--trips taken to sightsee or tour with a particular place planned to visit; this distinguishes "sightseeing" from "Pleasure Driving".

Entertainment--trips taken to go to a movie, the theater, opera, concert, bar, tavern, discotheque, cabaret, spectator sports (such as a ball game, races, track meet), or an amusement park.

Recreation (participant)--trips taken to participate in sporting or outdoor activities such as fishing, hunting, golf, swimming, picnicking, skiing, etc.; also, trips to participate in indoor activities such as skating, bowling, basketball, etc.

Vacation--trips reported by the respondent as "vacations".

Change of vehicle without change of mode--trips made specifically to change from one vehicle to another within the same "Means of Transportation" category. (For example, transferring from one bus to another, one plane to another, or from one passenger car to another.)

Variable: Purpose of Trip (cont'd.)

Change means of transportation--trips made specifically to change from one means of transportation to another; for example, taking a taxi to the airport to catch a plane, driving a car to a fringe parking area to take a bus into town, etc.

Pick up or leave off passengers--trips that are made to serve a passenger. For example, a trip by Mrs. Columbo to pick up her mother and drive her to the store on Travel Day would be reported as two trips: the trip to her mother's home for the purpose of picking up a passenger and the trip to the store for the purpose of shopping.

Return home--the trip is to the residence of the respondent at the time of the trip. In the case of a college student who lives on campus and is interviewed at school, trips to the dormitory or other living quarters on the campus are considered "Return home".

Lodging (overnight)--trips made for the purpose of taking overnight accommodations. This category is also to be used in lieu of "Return home" when return trips are to this lodging.

Social--trips taken to enjoy some form of social activity involving friends or acquaintances, such as a party, playing cards, dancing, etc.

Other--any purpose for a trip that does not fit into one of the above categories. Specify the purpose in the space provided in the trip column.

The following categories summarize the types of overnight accommodations referred to as "lodging".

Friends or relatives--lodging as a guest in the home of friends or relatives. Also included are nights spent in a facility owned by friends or relatives such as a cabin, houseboat, cottage, etc., regardless of whether the friends or relatives were present, as long as rent was not involved.

Rental accommodations--includes hotels, motels, motor inns, lodges, resorts, rental cabins or cottages, rented condominiums, tourist homes, YWCAs, Jewish Community Centers and other commercial establishments.

Own cabin, campsite or vacation home--refers to privately owned secondary homes or property owned by any member of the household.

Variable: Purpose of Trip (cont'd.)

Camping on public (government) campground--refers to park campground space owned or operated by federal, state, or local government.

Not applicable ("98") indicates that there was no driver present in the vehicle at the time of the accident.

Variable Name: Frequency Driving Road

Format: 1 column - numeric

Beginning
Column 22

Element Values:

- 1 Daily
- 2 Weekly
- 3 Monthly
- 4 Less than once a month
- 5 First time on road
- 8 Not applicable
- 9 Unknown

Remarks:

The following decision rules apply if the driver's response is given in units different than those listed.

Daily = \geq 3 times a week

Weekly = $<$ 3 times a week but \geq 3 times a month

Monthly = 1 or 2 times a month

Less than = less than

First time = first time

Not applicable means that no driver was present.

Variable Name: Driver Education

Format: 1 column - numeric

Beginning
Column 23

Element Values:

- 1 No formal driver training
- 2 In training at time of accident
- 3 High school driver training
- 4 Commercial driver training
- 5 Other formal driver training
(e.g., college, military, etc.) (specify)
- 6 Two or more types of formal
driver training
- 8 Not applicable
- 9 Unknown

Remarks:

Code "2" means that the driver must have been enrolled in a formal driver training class when the accident occurred. Not applicable means no driver was present.

Codes "3" through "6" mean that the driver had completed the type or number of courses indicated.

Code "4" refers to organizations that provide driver training for a profit. It excludes nonprofit organizations, employee training programs, and rehabilitative programs. These should be coded as other ("5").

Variable Name: License Status This Class of Vehicle

Format: 1 column - numeric

Beginning
Column 24

Element Values:

- 1 Valid License
- 2 No license, license required
- 3 Suspended/revoked
- 4 Expired license
- 5 Learner's permit
- 8 Not applicable (no license required)
- 9 Unknown

Remarks:

Not applicable means either no driver was present or a license was not required for the vehicle being driven, e.g., mo-ped in some states.

Code "1" includes licenses restricted to certain hours if the accident occurred within those hours.

Code "2" (No license, license required) refers to the class of vehicle being driven. Class is discussed under variable D09. As an example, the driver has an "operator's license" when a "public passenger" type license is required. For this driver, "2" should be coded.

Code "5" (Learner's permit) includes any type of preliminary license the driver obtained. It is defined as the state-sanctioned authority to operate a motor vehicle for a specified period with the requirement that the operator be accompanied by a person who holds a valid driver's license for the vehicle type being operated.

If official driver records can be obtained then the official information supercedes the driver's reported status.

Variable Name: License Restriction

Format: 1 column - numeric

Beginning
Column 25

Element Values:

- 1 No restrictions
- 2 Glasses and/or contact lenses
- 3 Daylight driving only
- 4 Handicap related restriction
- 5 Activity restriction
- 6 Other restriction (specify)
- 8 Not applicable
- 9 Unknown

Remarks:

Not applicable ("98") means no driver was present. These restrictions are ordered if more than one is cited. Code the lowest numerically valued restriction on this variable.

If official driver records can be obtained then the official information supercedes the driver's reported restrictions.

Variable Name: Additional License Restriction

Format: 1 column - numeric

Beginning
Column 26

Element Values:

- 3 Daylight driving only
- 4 Handicap-related restriction
- 5 Activity restriction
- 6 Other restriction (specify)
- 7 More than two restrictions
- 8 Not applicable
- 9 Unknown

Remarks:

Not applicable ("8") means no driver was present, no restrictions were reported, or only one restriction was reported. The restriction reported on the preceding variable (D15) must have been of a lower numerical value than the restriction reported here. Code "7" if the driver had three or more restrictions.

If official driver records can be obtained then the official information supercedes the driver's reported restrictions.

DRIVER VIEW OF TOTAL ACCIDENT CONTACT SEQUENCE

Record all impacts in the sequence that they occurred. For each impact, record: [a] its number, [b] the object contacted (from above codes), [c] the number of the impacting vehicle, [d] the location of the impact on that vehicle (from above codes), and [e] the vehicle's orientation (from above codes). If the impact involved another vehicle, list [f] its number, [g] location of the impact on the vehicle and [h] the vehicle's orientation. List up to six impacts. Place a check mark in the box for "object contacted" for that impact to indicate it was with another motor vehicle. If a vehicle is stopped at impact, use code 7 for Vehicle Orientation and write in "stopped", "parked", etc.

Have the driver sketch the accident sequence. For telephone interviews the investigator must sketch the accident sequence as described by the driver. It is not necessary that all the drivers involved in a multicar/multi-impact accident know the actual sequence of impacts. It is important to get each driver to describe how the accident occurred; each driver could provide a new insight into the dynamics of the collision. Hence each sketch drawn in driver form should reflect the knowledge of the driver of each vehicle and not the investigator's overall perceptions of the actual accident configuration.

Very few accidents will involve more than six impacts but for those that do, the investigator must select the six most severe impacts from the total number of impacts and then list them in sequence. (Ex. If there are a total of 9 impacts out of which the 3rd, 6th, and 7th impacts are minor compared to the rest, the investigator would list impacts 1, 2, 4, 5, 8, and 9 as per the driver's narration of sequence.) In these cases it is recommended that the investigator record the additional impacts on the reverse side of page 3 of the driver's form and annotate as to his/her basis for selecting the 6 most severe impacts. In the above example there will be (9) common impacts and all the driver's may not have the knowledge of all the impacts.

Also it should always be kept in mind that the common impact number is unique to an accident and not to a driver/vehicle.

Example: An accident involving four vehicles

Sketches and information of the accident sequence as recorded from each driver interview are shown in the next 6 pages. These sketches and impacts are recorded based on information given by each driver. Then a final accident sequence diagram is reconstructed based on scene inspection, vehicle inspection, police report and interviews. Then using this information the investigator determines the overall accident sequence (common impact numbers) and records the correct impact number on each driver form.

Assume you got the following information from each driver's interview.

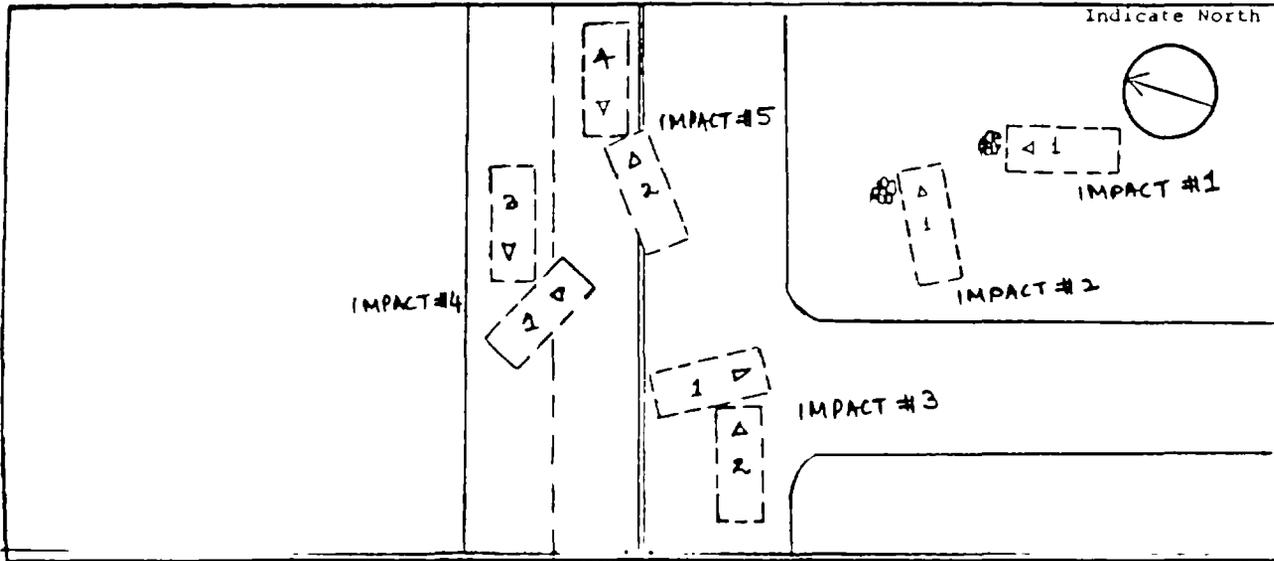
Driver #1: The driver tells you that he/she hit two trees before his/her vehicle was hit by another vehicle (Vehicle #2) which made him spin around into the path of (Vehicle #3) and was hit in the left side by Vehicle #3. The other vehicle (Vehicle #2) then hit (Vehicle #4) headon.

Driver #2: This driver tells you that vehicle #1 skidded into his path and his/her vehicle hit Vehicle #1 in the right side. Then his/her vehicle (#2) skidded into impact with vehicle #4 headon. He/she then tells you that he/she heard vehicle #1 impacting vehicle #3.

Driver #3: This driver gives you a similar type of description as driver #2 except he/she feels that vehicle #1 hit his/her vehicle before vehicle #2 impacted vehicle #4.

Driver #4: This driver tells you that all he/she knows about the accident is that vehicle #1 hit his/her vehicle headon.

FINAL DIAGRAM BASED ON ALL INTERVIEWS, POLICE
AND SCENE INSPECTION



Based on final accident dynamics as determined by the investigator drawing on his/her knowledge of scene inspection, vehicle inspection, police report and interviews, the actual impact sequence (common impact number) is determined as shown next above and entered in corresponding Driver Forms. (See next page.)

Variable Name: Traffic Violation Charged--Speeding

Format: 1 column - numeric

Beginning
Column 27

Element Values:

- 1 Yes
- 2 No
- 8 Not applicable
- 9 Unknown

Remarks:

Not applicable ("8") means no driver was present. The source of information is the police report. If the driver was charged in this accident for speeding, code yes ("1").

Variable Name: Traffic Violation Charged--DWI

Format: 1 column - numeric

Beginning
Column 28

Element Values:

- 1 Yes
- 2 No
- 8 Not applicable
- 9 Unknown

Remarks:

Not applicable ("8") means no driver was present. The source of information is the police report. If this driver was charged in this accident for driving under the influence, or for driving while intoxicated, then code yes ("1"). The nature (either the influencing agent which includes non-alcoholic drugs or the level of its presence) of the influence or intoxication may vary within jurisdictions. This variable records only that the offense was cited.

Variable Name: Traffic Violation Charged--Reckless Driving

Format: 1 column - numeric

Beginning
Column 29

Element Values:

- 1 Yes
- 2 No
- 8 Not applicable
- 9 Unknown

Remarks:

Not applicable ("8") means no driver was present. The source of information is the police report. If this driver was charged in this accident for reckless driving or for driving to endanger, then code yes ("1").

Variable Name: Traffic Violation Charged--Susp-Revoked License

Format: 1 column - numeric

Beginning
Column 30

Element Values:

- 1 Yes
- 2 No
- 8 Not applicable
- 9 Unknown

Remarks:

Not applicable ("8") means no driver was present. The source of information is the police report. If this driver was charged in this accident for driving with either a suspended or a revoked driver's license, then code yes ("1").

Variable Name: Traffic Violation Charged--Other Violation

Format: 1 column - numeric

Beginning
Column 31

Element Values:

- 1 Yes
- 2 No
- 8 Not applicable
- 9 Unknown

Remarks:

Not applicable ("8") means no driver was present. The source of information is the police report. If this driver was charged in this accident with a violation other than: speeding, driving under the influence, driving while intoxicated, reckless driving, driving to endanger, or driving with either a suspended or revoked license, then code yes ("1").

Variable Name: Traffic Violation Charged--Unknown Violation

Format: 1 column - numeric

Beginning
Column 32

Element Values:

- 1 Yes
- 2 No
- 8 Not applicable
- 9 Unknown

Remarks:

Not applicable ("8") means no driver was present. The source of information is the police report. If this driver was charged in this accident with a violation but no violation was specified, then code yes ("1"). A code of yes for this variable implies that the preceding five variables (D17 through D21) should be coded no ("2").

Variable Name: Alcohol Involvement

Format: 1 column - numeric

Beginning
Column 33

Element Values:

- 1 No, test not given
- 2 No, test given
- 3 Yes, test not given
- 4 Yes, test given
- 8 Not applicable
- 9 Unknown

Remarks:

Not applicable ("8") means no driver was present. The source of information is the police report. First find the location on the police report that indicates the police person's assessment with respect to whether or not alcohol was involved in this accident. In most instances, failure to specify should be interpreted as no ("1" or "2"). Next, determine if a blood alcohol test was given. This test could be a blood, breath, or urine test. No psychomotor (police observation of driver actions) test is of any value in this instance. Combine these two elements (involvement and test) in selecting the appropriate response.

Code "2" (No, test given) refers to a situation where a person is tested to determine the presence of alcohol but in the investigating officer's opinion, alcohol is not involved. This does not mean it is not present, only that it was not involved. Also, it does not mean "no test given"; instead, it may be interpreted as meaning "no involvement of alcohol, but a test was given to determine the presence of alcohol." This may be determined by the police whether or not the results are pending or available when the police report is completed.

Test includes instrumented field screening tests which indicate the presence of alcohol but not necessarily by the particular level. These devices are designed to segregate candidates for further testing from those persons where the suspected presence of alcohol is either nonexistent or too low for additional tests.

The various PSUs should discuss their individual unique police reports with the Zone Centers to distinguish involvement from presence of alcohol.

Variable Name: Measured Blood Alcohol Level

Format: 2 columns - numeric

Beginning
Column 34

Element Values:

Range: 00 through 30

Code actual reported number representing fraction
of alcohol present

97 Not tested

98 Not applicable

99 Unknown

Remarks:

Not applicable ("98") means that no driver was present. If no test was given (variable D23 responses "1" or "3"), then code not tested ("97"). The source of information can be the police report, a hospital/medical report, or any other official source. If the blood alcohol level (BAL) was given on the report or subsequently added after the case was initiated, code the reported value.

If the results are not available at the time the NASS case is initially submitted, leave blank and update this variable when the results are obtained.

Code unknown ("99") if instrumented field screening test given and it determined that no BAC test was required.

If an instrumented field screening test was given and it determined that a BAC test was required code either the reported BAC from the subsequent test or unknown ("99") if the precise level was not obtained.

Variable Name: Previous Speeding Convictions

Format: 1 column - numeric

Beginning
Column 36

Element Values:

Range: 0 through 7
7 Seven or more
8 Not applicable
9 Unknown

Remarks:

Not applicable ("8") indicates no driver was present. Unknown ("9") means that no official records were obtainable. The source is the official state record from the state in which the driver is licensed. Record the number of speeding convictions (points assessed, license suspensions, etc.) listed on the driver's record for the "previous three years" inclusive from the date of the accident.

Variable Name: Previous Other Moving Violation Conviction

Format: 1 column - numeric

Beginning
Column 37

Element Values:

Range: 0 through 7
7 Seven or more
8 Not applicable
9 Unknown

Remarks:

Not applicable ("8") indicates no driver was present. Unknown ("9"), means that no official records were obtainable. The source is the official state record from the state in which the driver is licensed. Record the number of moving violation convictions (points assessed, license suspensions, etc.) listed on the driver's record for the "previous three years" inclusive from the date of the accident.

Variable Name: Previous D.W.I. Convictions

Format: 1 column - numeric

Beginning
Column 38

Element Values:

Range: 0 through 7
7 Seven or more
8 Not applicable
9 Unknown

Remarks:

Not applicable ("8") indicates no driver was present. Unknown ("9") means that no official records were obtainable. The source is the official state record from the state in which the driver is licensed. Record the number of driving while intoxicated (or driving under the influence) convictions (points assessed, license suspensions, etc.) listed on the driver's record for the "previous three years" inclusive from the date of the accident.

Variable Name: Previous Recorded Suspensions and Revocations

Format: 1 column - numeric

Beginning
Column 39

Element Values:

Range: 0 through 7
7 Seven or more
8 Not applicable
9 Unknown

Remarks:

Not applicable ("8") indicates no driver was present. Unknown ("9") means that no official records were obtainable. The source is the official state record from the state in which the driver is licensed. Record the number of suspensions or revocations of the driver's license the driver has listed on the record. The suspension or revocation need not be for a traffic violation; e.g., failure to appear at an accident hearing or failure to provide proof of financial responsibility could be ground for suspension. Record the number listed for the "previous three years" inclusive from the date of the accident.

Variable Name: Previous Accidents

Format: 1 column - numeric

Beginning
Column 40

Element Values:

Range: 0 through 7
7 Seven or more
8 Not applicable
9 Unknown

Remarks:

Not applicable ("8") indicate no driver was present. Unknown ("9") means that no official records were obtainable. The source is the official state record from the state in which the driver is licensed. Record the number of previous accidents listed on the driver's record for the "previous three years" inclusive from the date of the accident

Accident Level Versus Traffic Unit Level

Environmental Data

There is a conceptual difference between the accident level and the traffic unit level environmental data. The accident level data is intended to represent the environment at the crash scene. In this sense one can say that the accident level environmental variables represent at-crash data. On the other hand the traffic unit level environmental variables are intended to provide the most representative description of the roadway environment that the driver (vehicle) had to cross just prior to the first harmful event. In this sense one can say that the traffic unit level environmental variables represent the environment just prior to crash.

When determining either the accident or traffic unit level environmental data the point of focus is at the location of the first harmful event. There are two mutually exclusive sets of locations that the first harmful event can occur in. They are: (1) in a junction (within the prolongation of the lines which form the boundary of the intersecting roadways) and (2) not in a junction. Recall that a junction is merely the intersection of two roadways. Further, the roadways can be either a highway, road, or street, or one or both of the roadways can be an alley or driveway. In the latter case there is a special rule for determining the accident level environment in a junction. Alleys and driveways can (in the vast majority of instances) be distinguished from highways, roads, and streets by the fact that the former are not named.

Any exceptions to this "name: rule" for distinguishing streets or roads from alleys or driveways should be handled on a case by case basis.

Determine the location of the first harmful event and proceed as follows:

1. The location of the first harmful event is obscure.
 - (a) The police report depicts the accident as occurring in a junction. Upon review of the actual scene you are unsure as to whether or not the first harmful event actually did or did not occur within the prolongation of the lines forming the boundaries of the intersecting roadways; therefore, assume it did occur in a junction and proceed as if it did (i.e., follow the "in-a-junction" rules).
 - (b) The police report depicts the accident as occurring other than in a junction. Upon review of the actual scene you are unsure as to where the first harmful event actually occurred. Follow the "not-in-a-junction" rules. However, if you do determine from the scene and other evidence that the location of the first harmful event was in a junction, then follow the "in-a-junction" rules.
2. In-a-junction: First, determine the traffic unit level environmental variables for each in-transport vehicle. Go to the mouth of the roadway that brought that vehicle into the junction. In the case of a vehicle abandoned in a junction go to the mouth of the roadway that most likely brought the vehicle into the junction. First determine the roadway's TA-1 Classification (it is understood that this determination will have to occur most likely from a map in your office; however, this determination is conceptually first.) Next follow the guidelines presented for variable D30 (Number of Travel Lines) and determine the total number of lanes for each vehicle's roadway (at the mouth). Finally, determine for each

the remaining variables (D31-D41) for each vehicle the values that are most representative of the driver's (vehicle's) environment back along the vehicle's (driver's) path just prior to its involvement in the collision. The phrase "just prior" is purposely left vague since the decision rests with the investigator. However, the distance should only go so far as is needed to include those points of transition which are most representative of the environment. Your judgment will be evaluated on the basis of the reasonableness of your selections.

For the accident level environmental variables where multiple roadways were involved in the accident's first harmful event, select one according to the following rules:

- (a) Choose the roadway with the higher (lower numerically) TA-1 Classification. If the values are the same then proceed to rule (b). In either case record the value in variable A22.
- (b) Choose the roadway with the greater number of lanes (variable D30). If the number of lanes are the same, then proceed to rule (c).
- (c) Choose the roadway on which the most at-fault driver was travelling, except for the alleys/driveways where the street used by the other vehicle is always chosen.

Once you have chosen the roadway complete the accident level environmental variables (A25-A36) based on the values recorded for that roadway's traffic unit level environmental variables (D30-D41). The values will be nearly identical.

3. Not-in-a-junction: (NOTE: An accident whose Roadway Section Type [A24] was listed as "intersection related"

[code "05"] is an example of an accident not in a junction.
First determine the traffic unit level environmental variables for each in-transport vehicle. If the first harmful event did not occur in a junction then there are two mutually exclusive locations in which it did occur.

- (a) Off roadway: For each in-transport vehicle involved in the first harmful event return to the location where the vehicle was last on the roadway. For this determination "on roadway" means that any part of the vehicle was in contact with the roadway. However, if a vehicle leaves one roadway and enters another roadway other than in the manner that the second roadway was designed to be travelled, ignore the second roadway and return to the location at which the first roadway was last departed. For example: (Situation A) Vehicle leaves roadway X, crosses a field, and enters roadway Y. Vehicle crosses roadway Y laterally until it impacts (a) an object (e.g., median barrier), (b) another motor vehicle, or (c) an object on the other side of the roadway. In any of these cases return to roadway X to record vehicle's traffic unit level environmental variables. (Situation B) Vehicle leaves roadway X to short cut traffic ahead. Vehicle while attempting to merge longitudinally on roadway Y impacts (a) an object--on or off the roadway, but on the trafficway, or (b) another motor vehicle. In either of these cases consider the vehicle to be associated with roadway Y.

Once you have determined the location where the vehicle last left the roadway the selection process for the proper values for the traffic unit level environmental variables is the same as for vehicles whose first harmful event was on the roadway. See (b) below for remaining instructions.

- (b) on roadway: Go to the location of the first harmful event. Determine the number of lanes (D30) most representative of the roadway at this location. Make this determination and all subsequent traffic unit level environmental determinations (D31-D41) looking back along the vehicle's path just prior to the impact. The phrase "just prior" is purposely left vague since the decision rests with the investigator. However, the distance should only go so far as is needed to include those points of the location which are most representative of the environment. Your judgment will be evaluated on the basis of the reasonableness of your selections.

For the accident level environmental variables use a generalized cross-section of the roadway at the location of the first harmful event. Record TA-1 Classification (A22) for the roadway at this location. Determine the appropriate values for each of the remaining accident level environmental variables (A25-A38) at this location.

- (c) One special rule needs to be considered. If the location of the first harmful event is one and the same as an area of transition (of any kind--straight-curve, level-grade, wet-dry, concrete-bituminous, etc.) record the transition according to the following rules:

- (01) Choose undivided over divided;
- (02) Choose other divisions over barrier division;
- (03) Choose partial control over full access control;
- (04) Choose no control over partial access controls;
- (05) Choose shoulders over no shoulders;
- (06) Choose two shoulders over one;
- (07) Choose curve over straight;
- (08) Choose grade over level;
- (09) Choose hillcrest or sag over grade;
- (10) Choose other surface types over concrete;
- (11) Choose gravel, dirt, brick or block over bituminous;
- (12) Choose gravel or dirt over brick or block;
- (13) Choose dirt over gravel;
- (14) Choose nondry surface conditions over dry;
- (15) Choose snowy, slushy over other nondry conditions;
- (16) Choose icy over wet or other conditions; and
- (17) Choose wet over other conditions.

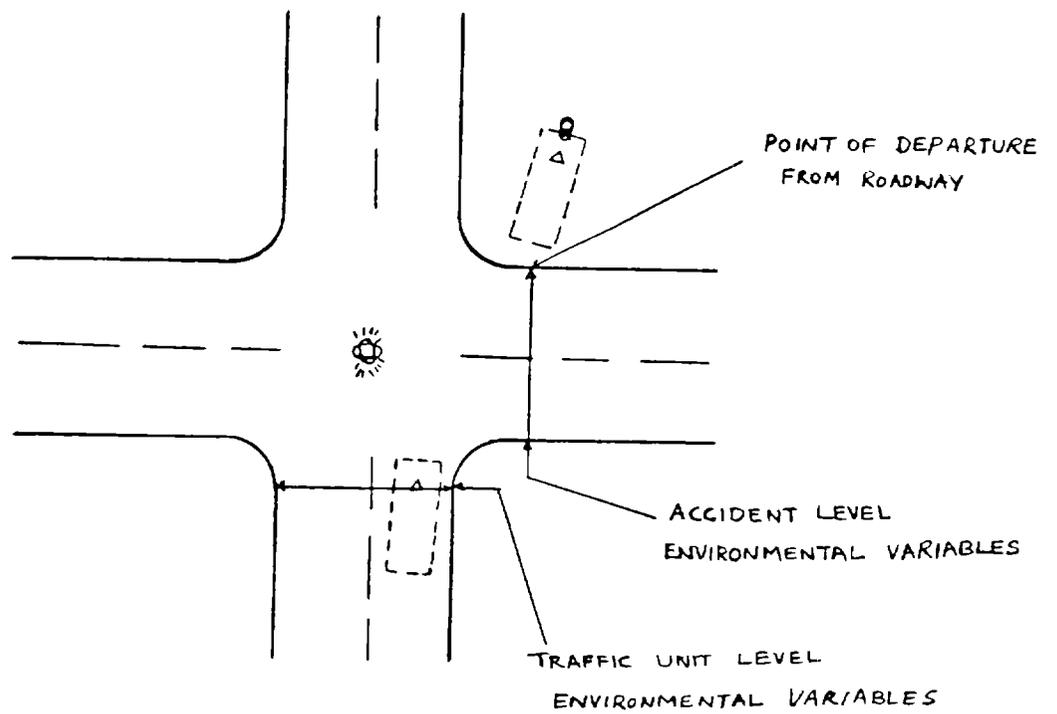
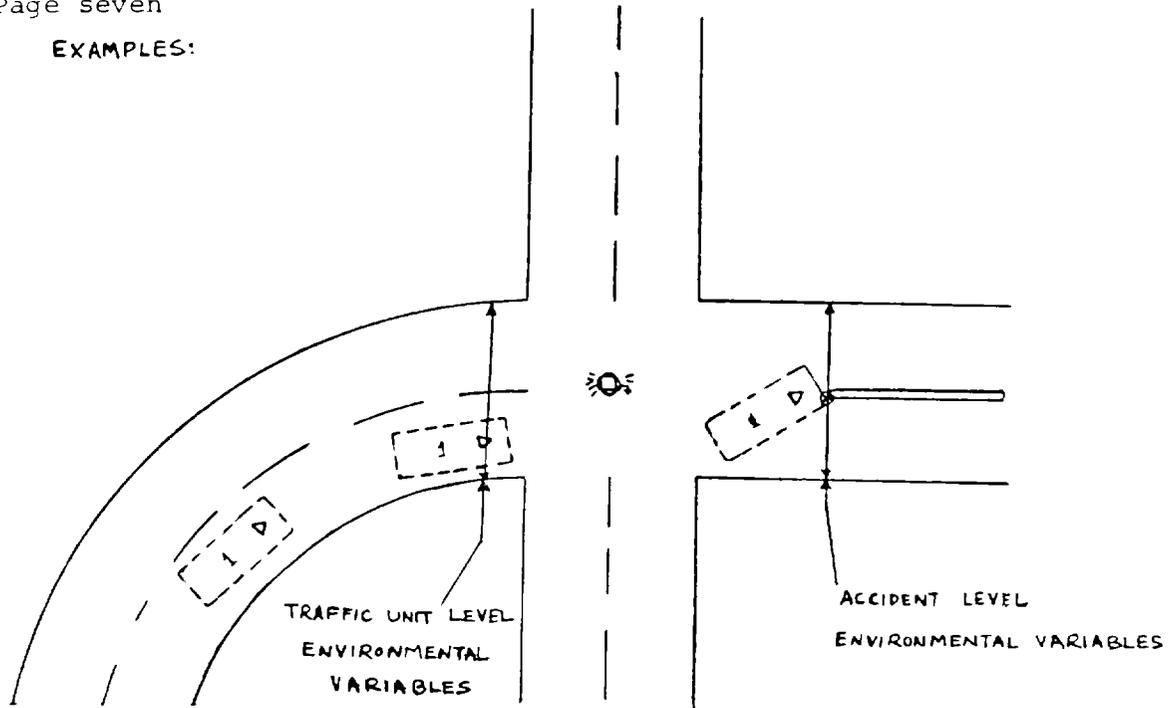
The location of the first harmful event and the subsequent selection of the accident level environmental variables can occur from a roadway different than any

roadway on which an in-transport vehicle was traveling at the time of the accident, in which case the accident and driver level environmental variable may be different. This is true even in single vehicle collisions. An example of this occurs when a vehicle is attempting to negotiate a junction, and it impacts an object outside of the junction but on another roadway (different street or different leg of the same street but which has different attributes than the other leg). Further, in the opinion of the investigator the former roadway is the one most representative of the vehicle's (driver's) environment just prior to the collision.

4. For those in-transport vehicles not involved in the accident's first harmful event (but involved in the accident) determine the traffic unit level environmental variable for that vehicle at the location where that vehicle's first harmful event occurs.

(See next page for examples)

EXAMPLES:



Variable Name: Number of Travel Lanes

Format: 1 column - numeric

Beginning
Column 41

Element Values:

- 1 One
- 2 Two
- 3 Three
- 4 Four
- 5 Five
- 6 Six
- 7 Seven or More
- 9 Unknown

Remarks:

If the collision occurred other than in a junction code the value on the basis of the most representative description of this driver's roadway leading to the location of this vehicle's first harmful event. The location of the first harmful event and subsequently the attribute selected is determined first from observation by the investigation of the site or from the police report or from any other source (e.g., interview, witness, etc.).

If the first harmful event occurs off the roadway, code the value on the basis of the most representative description of the roadway leading to the point of departure.

If the first harmful event is located in the intersection of two or more roadways, code the number of lanes on the basis of the most representative description of the approach leg to the intersection for this vehicle.

A roadway is that part of a trafficway where vehicles travel. A divided trafficway is composed of two or more roadways.

If traffic flows in both directions and is undivided, code the number of lanes in both directions. If the trafficway is divided into two or more roadways, code only the number of lanes for the roadway on which the vehicle under consideration was travelling

If turn bays, acceleration, or deceleration lanes exist and are physically located within the cross section of the roadway where the first harmful event occurred and these lanes are the most representative of the driver's environment just prior to the impact, then they are to be included in the number of lanes.

Variable: Number of Travel Lanes (cont'd.)

The number of lanes counted includes any which are narrowed or rendered unusable by restriction or the right-of-way cited in variables A37 or A38.

In a number of instances there will be uncertainty as to the number of lanes due to (1) nonstandard roadway widths; (2) variability of width in the same roadway due to disrepair and other reasons; or (3) absence of lane, center, and edge lines, etc. The number coded in these cases should represent the number of operational lanes based on customary or observed usage.

On a road that has legal parking such that the legal parking area ends short of the junction of the roadway with another roadway or drive, and the space left between the end of the legal parking area and the beginning of the junction can be utilized for turning by a vehicle on the roadway, do not consider this additional area as another travel lane (regardless of customary or observed usage in this instance). This area should be construed as additional width to the existing travel lane(s). The only time that another lane will be counted at a junction is when that space is expressly designated for turning (e.g., by lane marking, signs, or signals).

For entrance and exit ramps code the number of lanes for that roadway section (Also see D31 remarks).

Variable Name: Trafficway Division and Median Type

Format: 1 column - numeric

Beginning
Column 42

Element Values:

- 1 Undivided
- Divided (median with greater than or equal to four feet)
- 2 Paved flush--painted or unpainted (i.e., not curbed)
- 3 Curbed
- 4 Unpaved, uncurbed median (e.g., grass, gravel, etc.)
- 5 Median barrier
- 6 Other median type (specify)
- 9 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D30). It is associated with the location of this vehicle's first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following D29.)

A trafficway may include several roadways if it is a divided highway. Trafficways are not divided unless the divider is a barrier of median four feet or greater (1.2 meters) and curbed, unpaved, uncurbed or paved flush--painted or unpainted.

Physical division of roadways (e.g., box beam median) overrides simple lateral division (i.e., greater than four foot separation); therefore, code "5" takes precedence over codes "2", "3", "4", and "6".

Entrance and exit ramps divided from (1) the primary roadway (the one used for TA-1 [A22] purposes), and (2) from each other (two ramps existing together) but separated by a barrier should also be coded as divided.

Variable Name: Access Control

Format: 1 column - numeric

Beginning
Column 43

Element Values:

- 1 Full
- 2 Partial
- 3 Uncontrolled
- 9 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D30). It is associated with the location of this vehicle's first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following D29.)

Code "1" (Full) refers to those situations where the authority to control access is exercised to give preference to through traffic by providing access connection with selected public roads only and by prohibiting crossings at grade or direct driveway connections.

Code "2" (Partial) refers to those situations where the authority to control access is exercised to give preference to through traffic to a degree that, in addition to access connections with selected public roads, there may be some crossings at grade and some private driveway connections.

Code "3" (Uncontrolled) refers to those situations where the authority having jurisdiction over a highway, street, or road, does not limit the number of points of ingress or egress except through the exercise of control over the placement and geometrics of connections as necessary for the safety of the traveling public.

In summary, consider the roadway section which was chosen for the reporting of the Number of Travel Lanes. If there are no grade crossings, then code "1". If grade crossings exist but there is an indication that a limiting of access is taking place, then code "2". If no indication of access limiting can be found, then code "3". If a decision cannot be made, code "9".

Variable Name: Direction of Travel Flow

Format: 1 column - numeric

Beginning
Column 44

Element Values:

- 1 One way
- 2 Two way
- 9 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D30). It is associated with the location of this vehicle's first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following D29.)

Variable Name: Shoulder Presence

Format: 1 column - numeric

Beginning
Column 45

Element Values:

- 1 No shoulder
- 2 Left shoulder
- 3 Right shoulder
- 4 Left and right shoulders
- 9 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D30). It is associated with the location of this vehicle's first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following D29.)

Definition: D16.1-1976, section 2.2.18, pages 6-7.

Code "1" (No shoulders) if the roadway is curbed and has no shoulders; code the appropriate response if there are both curbs and shoulders (either code "2", "3", or "4").

Shoulder is still present even if not usable at the time of the accident due to ambient conditions such as plowed snow, parked vehicles, etc.

Variable Name: Roadway Alignment

Format: 1 column - numeric

Beginning
Column 46

Element Values:

- 1 Straight
- 2 Curve right
- 3 Curve left
- 9 Unknown

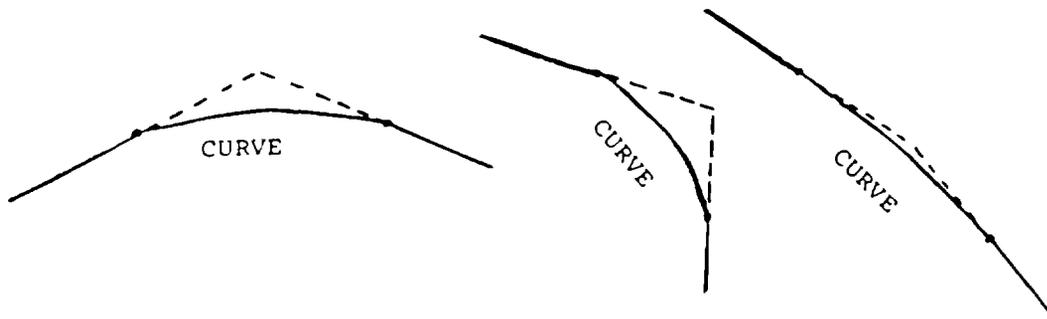
Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D30). It is associated with the location of this vehicle's first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following D29.)

Code "1" (Straight) refers to a horizontal surface which is tangent.

Codes "2" (Curve right) and "3" (Curve left) refer to a horizontal surface in transition between two points of tangency as in the examples. The vehicle's direction of travel determines whether the curvature is right or left.



Any perceptually determined curvature between two tangent sections of a roadway constitutes a curve. It is not necessary to quantify the degree of curvature.

Variable Name: Roadway Profile

Format: 1 column - numeric

Beginning
Column 47

Element Values:

- 1 Level
- 2 Positive grade
- 3 Negative grade
- 4 Hillcrest
- 5 Sag
- 9 Unknown

Remarks:

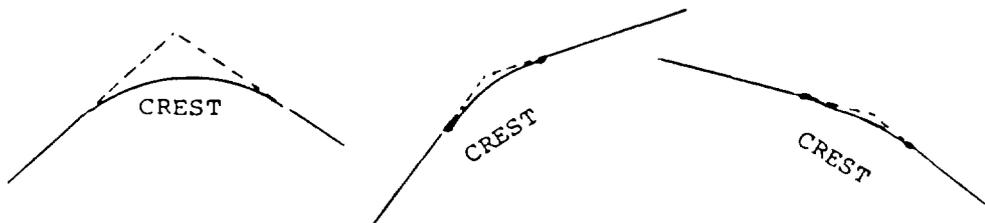
The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D30). It is associated with the location of this vehicle's first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following D29.)

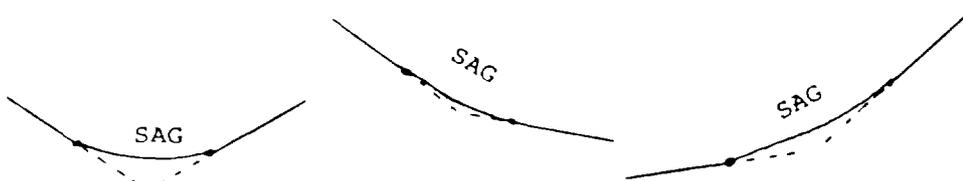
Code "1"(Level) refers to a tangent surface whose gradient is $<2\%$.

Code "2"(Grade) refers to a tangent surface whose gradient is $>2\%$.

Code "3"(Hillcrest) refers to a surface in vertical transition between two points of tangency as in the examples:



Code "4" (Sag) refers to a surface in vertical transition between two points of tangency as in the examples:



Variable Name: Surface Type

Format: 1 column - numeric

Beginning
Column 48

Element Values:

- 1 Concrete
- 2 Bituminous (asphalt)
- 3 Brick, block
- 4 Slag, gravel, or stone
- 5 Dirt
- 6 Other (specify)
- 9 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D30). It is associated with the location of this vehicle's first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following D29.)

Variable Name: Surface Condition

Format: 1 column - numeric

Beginning
Column 49

Element Values:

- 1 Dry
- 2 Wet
- 3 Snowy, slushy
- 4 Icy
- 5 Other (e.g., sand, dirt, oil) (specify)
- 9 Unknown

Remarks:

The element value is based on the location which the investigator selects as the descriptor that best represents the driver's pre-crash environment. In determining the surface condition the investigator should use police reports, interviews and observation of the site; do not report the conditions which are observed several days following the accident unless they are felt to be the same as those at the time of the accident.

Consider the same lanes which were used to determine the Number of Travel Lanes (D30) and report the surface condition for those lanes.

It is possible for different surface conditions to exist on the same or different roadways (e.g., intermittent wet and dry sections on same roadway; one roadway covered with ice whereas the other is covered with snow). The investigator should consider but not necessarily be restricted by the information on the police report for making this assessment. Driver Forms should also be consulted, particularly the one whose vehicle was on the above travel lanes which correspond to the first harmful event. Although it may be difficult to ascertain the surface condition for a particular section, the investigator should attempt to obtain a value which is most representative of the condition for those lanes.

If sand, dirt or oil occurs in combination with moisture (Codes "2", "3", or "4"), code the moisture condition. Code "5" only if the road was otherwise dry (Code "1").

Variable Name: Junction Traffic Controls (cont'd.)

If a school guard, police officer, or other officially designated person controls both pedestrian and vehicular traffic, code "6" (other traffic control). This includes statutory controls at junctions which are otherwise not physically controlled.

If the lanes which were used to determine the number of travel lanes have two or more controls, select one of the values as follows:

- select "3" if combined with any value other than "5";
- select "4" if combined with "6"; and
- select "5" if combined with any value.

However, if the other traffic control ("6") is an officially designated person, then "6" takes precedence over values "1" through "5".

Information signs (e.g., "no left turn") do not constitute Junction Traffic Controls as do Stop, Yield signs, etc.

Variable Name: Accident Occurrence in School Zone

Format: 1 column - numeric

Beginning
Column 51

Element Values:

- 1 No
- 2 Yes
- 9 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D30). It is associated with the location of this vehicle's first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following D29.)

Code "2" (yes) should only be used if a sign or road marking was present and the accident occurred during the time the sign or marking was in effect (i.e., this applies to the short period before, during and the short period following school sessions).

Variable Name: Speed Limit

Format: 2 columns - numeric

Beginning
Column 52

Element Values:

Code actual posted or statutory speed limit
99 Unknown

Remarks:

The attribute is determined from the same roadway which was used to determine the Number of Travel Lanes (D30). It is associated with the location of this vehicle's first harmful event.

The attribute selected is based solely on observation by the investigator at the site; the investigator selects the descriptor that best represents the vehicle's environment just prior to the impact. (NOTE: If uncertainty exists concerning the location of the first harmful event, refer to point "1." in the accident level versus traffic unit level environmental data discussion, following D29).

Disregard advisory or other speed signs which do not indicate the legal speed limit. Furthermore, special attention should be given so as not to confuse advisory signs on entrance or exit ramps or near intersections with the actual legal maximum speed.

Do not use the police report for selecting an element value.

If no sign is posted back in the direction from which the vehicle came for the above travel lanes, the investigator should reference state statutes to obtain the applicable statutory maximum for the site (local or state).

If the state has a statute that uniformly reduces the maximum allowable speed in or near a construction zone, then code the indicated reduced limit.

Code "99" (Unknown) should be used on roadways which are neither posted nor which have a statutory limit (e.g., parking lot roadways or entrance/exits, service station entrance/exits, or driveways, etc.).

Variable Name: Vehicle Number

Format: 2 columns - numeric

Beginning
Column 10

Element Values:

Range: 01 through 30

Remarks:

Code the Vehicle Number for the vehicle in which this occupant was riding (i.e., as a driver or as a passenger--in or on the vehicle).

One and only one occupant is assumed to be in a hit-and-run vehicle (unless reliable evidence to the contrary exists) and the one person is also assumed to be the driver.

Variable Name: Occupant Number

Format: 2 columns - numeric

Beginning
Column 12

Element Values:

Range: 01 through 50

Remarks:

Occupant numbers must be assigned sequentially beginning with "01". No numbers may be skipped. Assign numbers left to right and front to back among occupants.

Assign numbers last to persons on the vehicle or in an enclosed area. Persons appended to vehicle for motion (e.g., bicyclist holding on to vehicle) are either pedestrians or other nonmotorists.

Persons on a motorcycle are assigned numbers sequentially starting with "01". Assign numbers from front to back among occupants. If there are occupants in a side car, they are to be coded after the motorcycle occupants by assigning numbers left to right and front to back among the remaining occupants.

Drivers do not have to be coded "01" (e.g., right hand drive vehicles). However, code the assumed driver of a hit-and-run vehicle as "01".

Variable Name: Occupant's Age

Format: 2 columns - numeric

Beginning
Column 14

Element Values:

00 Less than one year old
97 97 years and older
99 Unknown

Remarks:

Age is recorded at time of accident with respect to the occupant's last birthday.

Variable Name: Occupant's Sex

Format: 1 column - numeric

Beginning
Column 16

Element Values:

- 1 Male
- 2 Female
- 9 Unknown

Remarks:

Self-explanatory.

OCCUPANT FORM

010

Variable Name: Occupant's Height

Format: 2 columns - numeric

Beginning
Column 17

Element Values:

Range: 12 through 85 inches
99 Unknown

Remarks:

Self-explanatory.

OCCUPANT FORM

011

Variable Name: Occupant's Weight

Format: 3 columns - numeric

Beginning
Column 19

Element Values:

Range: 005 through 400 pounds
999 Unknown

Remarks:

Self-explanatory.

OCCUPANT FORM

012

Variable Name: Occupant's Role

Format: 1 column - numeric

Beginning
Column 22

Element Values:

- 1 Driver
- 2 Passenger
- 9 Unknown

Remarks:

Hit-and-run vehicles are assumed to have only one occupant (unless reliable evidence to the contrary exists) and that person is assumed to be the driver.

Variable Name: Occupant's Seat Position

Format: 2 columns - numeric

Beginning
Column 23

Element Values:

01	Front seat-left side	10	Front seat-additional passenger
02	Front seat-middle	11	Second seat or beyond-additional passenger
03	Front seat-right side	12	Truck-tractor sleeping section
04	Second seat-left side	13	Other enclosed area (Specify)
05	Second seat-middle	14	In or on Unenclosed area (Specify)
06	Second seat-right side	15	In or on trailing unit (Specify)
07	Third seat-left side	99	Unknown
08	Third seat-middle		
09	Third seat-right side		

Remarks:

More than one person may have the same seating position (e.g., child on or in mother's lap).

For motorcycles, code driver "01" (Front seat-left side), all sidecar passengers "02" (Front seat-middle), all passengers behind the driver "04" (Second seat-left side), and all passengers on lap of driver (in front of) "01".

In coupes and other cars designed for only 2 passengers in front or in back, use codes "01", "03", "04", "06", "07", "09" when coding occupants.

Code "10" and "11" can be used to record the position of someone sitting on the floor or lying across the seat. In addition, when two or more persons are sitting abreast of one another (as opposed to on or in lap) in the same seating location, since only one can be assigned the seat's position, the additional passenger codes "10" and "11" must be used. Assign the older person the seat's position (i.e., codes "01"- "09").

Unknown ("99") should be assigned to the assumed driver of a hit-and-run vehicle unless evidence clearly indicates the position of the person or persons.

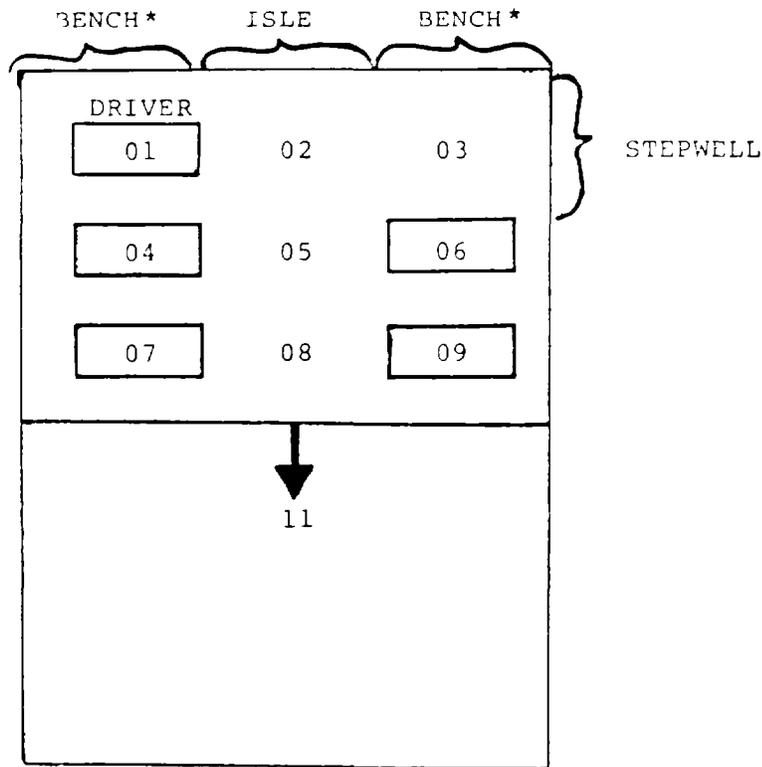
Variable Name: Occupant's Seat Position (cont'd.)

Code "13" (Other enclosed area) for any occupants beyond the 3rd seat in other than a bus.

Code "13" for a fold-down type seat.

Code "14" (In or on unenclosed area) includes those occupants riding on fender, boot of convertible, open cargo box on truck, etc. Persons appended to vehicle for motion are either pedestrians or other nonmotorists.

For buses use the following scheme:



* Regardless of whether seat is lateral or longitudinal.

Variable Name: Entrapment

Format: 1 column - numeric

Beginning
Column 25

Element Values:

- 1 Not entrapped
- 2 Entrapped
- 8 Not applicable
- 9 Unknown

Remarks:

Code "8" (Not applicable) for the driver or occupants of a motorcycle. However, this does not include sidecars.

Entrapped means that part of the occupant was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.

Persons who are completely or partially ejected and subsequently pinned by their own vehicle and any surface other than their own vehicle are not considered entrapped.

If the vehicle is not inspected and/or the occupant is not interviewed but the police report states that the person was "trapped", the investigator must verify through the officer, emergency personnel or other witnesses that the person was in fact in the vehicle and mechanically restrained. This is because the above definition is more restrictive than common usage of the term. Code "9" (Unknown) if unable to obtain verification in the above situation.

It is suggested that the margin indicator which references The Vehicle Form be filled in with a checkmark (✓) to indicate that the actual crosscheck back to the form has been made prior to coding the investigator's final opinion.

Variable Name: Ejection

Format: 1 column - numeric

Beginning
Column 26

Element Values:

- 1 None
- 2 Partial ejection
- 3 Complete ejection
- 4 Ejection, unknown degree
- 8 Not applicable
- 9 Unknown

Remarks:

Code "8" (Not applicable) for the driver or occupants of a motorcycle (not including sidecar) or any persons riding on the exterior of a vehicle, such as the fenders (this does not include pickup beds, flat beds, boot of a convertible, and persons riding on open tailgates).

Ejection refers to persons being completely or partially thrown from the vehicle during the course of the crash.

Code "2" (Partial ejection) refers to a situation where part of the occupant's body remains in the vehicle. This does not apply to occupants who are not initially in the seating compartment of the vehicle (e.g., pickup beds, motorcycle sidecars, flat beds, boot of a convertible, and persons riding on open tailgates).

Code "3" (Complete ejection) refers to a situation where the occupant's body is entirely outside the vehicle but may be in contact with the vehicle.

Persons in or on a Special Vehicle (V13, "51" through "58") will have to be handled depending upon the occupant protection provided. If the occupant can be contained (at least from the waist down) inside of the occupant compartment, then ejection is relevant; otherwise, code not applicable "8" for those occupants.

Police reported ejections may be coded if there is no vehicle inspection or occupant interview provided that the ejectee was in the seating compartment of the vehicle and there is no evidence which contradicts the reported ejection.

It is suggested that the margin indicator which references the Vehicle Form be filled in with a checkmark (✓) to indicate that the actual crosscheck back to the form has been made prior to coding the investigator's final opinion.

Variable Name: Ejection Area

Format: 2 columns - numeric

Beginning
Column 27

Element Values:

01 Windshield
02 Left front
03 Right front
04 Left rear
05 Right rear
06 Rear
07 Roof (convertible or sun roof)
08 Other area (e.g., sidecar, back
of pickup, etc.)
98 Not applicable
99 Unknown

Remarks:

Code "98" (Not applicable) applies to persons who are not ejected, to motorcycle occupants in other than a sidecar, or to persons riding on fenders.

Code "06" (Rear) is restricted to persons riding in a passenger compartment, who are ejected through the rear window, open tailgate (station wagon), hatchback, etc.

Codes "01" through "07" are designated for use with areas designed for passenger protection (e.g., passenger cars, vans, truck cabs, self-contained RVs and motor homes). Trailers, add-on campers, haywagons, etc. are to be coded under other area, "08".

Code "08" (Other area) also applies to persons riding on open tailgates, or ejected through standard roofs which are torn open. Persons ejected from special vehicles with waist down protection but not encapsulated should also be coded here.

Code "99" (Unknown) if the sole source for the ejection is the police report.

It is suggested that the margin indicator which references the Vehicle Form be filled in with a checkmark (✓) to indicate that the actual crosscheck back to the form has been made prior to coding the investigator's final opinion.

Variable Name: Ejection Medium

Format: 2 columns - numeric

Beginning
Column 29

Element Values:

- 01 Door
- 02 Open roof structure
- 03 Fixed windows
- Operable windows
- 04 Roll down type
- 05 Hinged type
- 06 Sliding type
- 07 Other type (specify)

- 08 Other medium (specify)
- 98 Not applicable
- 99 Unknown

Remarks:

Code "98" (Not applicable) applies to persons who are not ejected, to motorcycle occupants in other than a sidecar, or to persons riding on fenders.

Code "08" (Other medium) applies to persons riding in pick-up beds, on flat beds, in sidecars, on open tailgates, and for other situations which cannot be classified in codes "1-7" such as standard roofs which are torn open.

In addition, use "08" when someone is ejected from a trailer or from an add-on camper, haywagon, special vehicle with only waist down protection, etc.

Codes "4-7" all refer to windows.

Code "02" (Open roof structure) applies to convertible or sun roofs only.

Code "99" (Unknown) if the sole source for the ejection is the police report.

It is suggested that the margin indicator which references the Vehicle Form be filled in with a checkmark (✓) to indicate that the actual crosscheck back to the form has been made prior to coding the investigator's final opinion.

Variable Name: Medium Status

Format: 1 column - numeric

Beginning
Column 31

Element Values:

- 1 Open
- 2 Separation
- 3 Closed, closed when damaged
- 8 Not applicable
- 9 Unknown

Remarks:

Code "8" (Not applicable) applies to persons who are not ejected, to motorcycle occupants in other than a sidecar, or to persons riding on fenders.

Code "1" (Open) applies to convertible roofs, sun roofs, windows, doors or tailgates that are completely open immediately prior to impact, or to other open areas of vehicles such as pick-up beds, motorcycle sidecars, special vehicles with only waist down protection and flatbed trucks.

Codes "1" (Open) and "3" (Closed, closed when damaged) refer to the status of the medium immediately prior to the impact.

Code "2" (Separation) is restricted to use only with bonded windows and reflects a separation which may be attributable to either the forces of the collision or to internal contact.

Code "3" (Closed, closed when damaged) refers to a window that is closed or partially closed when damaged.

Code "3" (Closed, closed when damaged) also refers to a door that is closed when damaged so as to experience latch and/or hinge failure causing the door to open.

Code "3" (Closed, closed when damaged) may also be used when any vehicle structure (e.g., standard roof) is damaged such as to permit ejection.

Code "9" (Unknown) if the sole source for the ejection is the police report.

It is suggested that the margin indicator which references the Vehicle Form be filled in with a checkmark (✓) to indicate that the actual crosscheck back to the form has been made prior to coding the investigator's final opinion.

Variable Name: Treatment - Mortality

Format: 1 column - numeric

Beginning
Column 32

Element Values:

- 1 Fatal
Nonfatal
- 2 Hospitalization
- 3 Transported and released
- 4 Treatment-other (specify)
- 5 No treatment
- 9 Unknown

Remarks:

Official sources (if they exist) take precedence over interview data.

Code "1" (Fatal) within 30 days of accident.

Code "2" (Hospitalization) when hospitalization occurs as a result of injury (need not be taken directly to a hospital). See Hospital Stay (020) for hospitalization criterion.

Code "3" (Transported and released) When the person went directly from the accident scene to a treatment facility (hospital, clinic, doctor's office, etc.). The means of transportation is not a consideration.

Code "4" (Treatment - other) includes doctor treatment, treatment at scene, first aid, self-treatment, hospital if other than directly from scene but treated and released, etc.

If a person survives the injuries, receives treatment at a hospital, but is not admitted for hospitalization, that person's treatment is to be coded as either "3" or "4", depending upon whether the person went directly or indirectly to the hospital. It does not matter if the person is treated for one hour or twelve, only that the person is released following treatment. Nor does it matter if the treatment begins prior to midnight and spans into the following day.

Variable Name: Hospital Stay

Format: 2 columns - numeric

Beginning
Column 33

Element Values:

Code number of days of hospitalization up to 30.
31 31 days or more
98 Not applicable (e.g., D.O.A.)
99 Unknown

Remarks:

Official sources (if they exist) take precedence over interview data.

Code "00" if not injured or injured but not admitted.

Code "98" (Not applicable) if fatal at scene, pronounced dead on arrival, or survival does not extend beyond the emergency room.

The basis for the number of days coded is an overnight criterion. Every time a person remains past midnight subsequent to admission, it is one day. The only exception is when a person dies on the same day as the admission.

In the event that the person survives the emergency room but dies subsequent to admission, then code at least "01", even if the person expires the same day as admitted.

If a person is admitted, lived four days in the hospital, then expired, code "04".

Variable Name: Working Days Lost

Format: 2 columns - numeric

Beginning
Column 35

Element Values:

Code number of days for which work was lost up to 30
31 31 days or more
98 Not applicable (e.g., D.O.A.)
99 Unknown

Remarks:

Report the actual number of "work" days lost due to accident by an employed person or a full-time college student; children, retirees, or unemployed persons are not included.

Employed is defined to mean that the person was scheduled to work at least four hours on each of the days lost. Each such day is counted as a full day so long as the person was scheduled to work at least four hours on the day lost. Do not cumulate the hours and convert to equivalent full time days; however, indicate on the form if the person works less than full time but greater than four hours per day by annotating "part-time" or "PT".

The days lost need not be due to injury.

Days lost include Saturdays, Sundays, afternoon and evening shifts if so scheduled. Do not count double shifts or days at time and one-half pay, etc., as more than one day.

If a person is not employed, not a full-time college student, or works less than four hours per day, then code "98".

If a person is fatal at the scene, pronounced dead on arrival, or survival does not extend beyond the emergency room, code "98" (not applicable).

If a person expires twenty days following the accident, code the number of work days which were lost during the period. In this example, it would be twenty or less (depending upon the number of days scheduled) if the person was employed or a full-time college student.

Do not include days lost by persons who were not directly involved in the accident but who lost days because of it (e.g., husband who was not in accident but stayed home to take care of wife who was injured and required assistance).

OCCUPANT FORM

022

Variable: This variable deleted in this version.

Format: 1 column

Beginning
Column 37

Variable Name: Active Restraint System Availability

Format: 1 column - numeric

Beginning
Column 38

Element Values:

- 1 None
- 2 Lap belt and shoulder harness
- 3 Lap belt
- 4 Shoulder harness
- 5 Helmet
- 6 Child safety seat
- 7 Other restraint (specify)
- 9 Unknown

Remarks:

Select the system which was available for usage if so desired by the occupant. Restraints which were installed but subsequently removed or cut should not be considered to be available. In other words, availability is determined by presence and functional status; usage is not to be considered in making this determination.

Belts which are knotted, buckled at the rear of the seat bench, stored below the bench, etc. should be considered as available if they were otherwise operative.

Persons such as children who are held by another person are not considered to be restrained.

Child safety seat (code "6") is considered available if located so as to be retrievable by a person while in the passenger compartment (i.e., the safety seat is not in the trunk, trailer, etc.) It should be coded as available for all applicable children if it exists, even if there are more children than safety seats.

Identify any other restraint if the variable is coded "7".

It is suggested that the margin indicator which references the Vehicle Form be filled in with the response from the Vehicle Form to aid in the actual crosscheck prior to coding the investigator's final opinion.

Variable Name: Active Restraint System Use

Format: 1 column - numeric

Beginning
Column 39

Element Values:

- 1 None (includes unavailability)
- 2 Lap belt and shoulder harness
- 3 Lap belt
- 4 Shoulder harness
- 5 Helmet
- 6 Child safety seat - in proper use
- 7 Other restraint used
- 9 Unknown

Remarks:

Code "2" is used when the occupant is "encompassed" both in the lap and upper torso region by a lap and shoulder belt combination. Defeated interlock or buzzer warning systems, as well as maladjustment of the belts do not detract from the usage; however, if the inertia reel, retracting mechanism, or latch mechanism malfunctioned, the lap and/or shoulder belt which failed should not be considered as used. If a person has an integral lap and shoulder harness but is only "encompassed" by the lap portion (having the shoulder belt behind his or her back), code "3".

Codes "3" and "4" must be similarly considered.

Code "5" is to be used if the helmet is worn; it is not necessary for the chin strap to be utilized.

Code "6" is to be indicated only when the safety seat is installed so as to comply with the manufacturer's directions (i.e., seat must be integrated with the vehicle via the seat belts, through the use of a tether, etc.), and is occupied by the child.

It is suggested that the margin indicator which references the Vehicle Form be filled in with the response from the Vehicle Form to aid in the actual crosscheck prior to coding the investigator's final opinion.

Variable Name: Passive Restraint System

Format: 1 column - numeric

Beginning
Column 40

Element Values:

- 1 None Available
- 2 Air bag - deployed
- 3 Air bag - did not deploy
- 4 Passive belt
- 5 Other restraint (specify)
- 9 Unknown

Remarks:

If a vehicle is equipped with an air bag, the investigator should only state whether or not it deployed. No consideration is to be made regarding whether it should have deployed, as this will be made by the Zone Centers or NHTSA. Note that an air bag is not designed to deploy in every collision.

Passive belt restraints which are installed by the manufacturer but subsequently removed or cut should not be considered available.

Identify any other passive restraint if the variable is coded "7".

It is suggested that the margin indicator which references the Vehicle Form be filled in with the response from the Vehicle Form to aid in the actual crosscheck prior to coding the investigator's final opinion.

Variable Name: Passive Restraint Defeated

Format: 1 column - numeric

Beginning
Column 41

Element Values:

- 1 No (includes unavailability)
Yes
- 2 Passive belt not worn
- 3 Air bag disconnected
- 4 Air bag not reinstalled
- 5 Other restraint
- 9 Unknown

Remarks:

Code "2" (Passive belt not worn) if the shoulder belt is disconnected or placed behind the person's back.

Code "3" (Air bag disconnected) refers to a situation where components of the system are rendered incapable prior to the collision (e.g., fuse removed, blown, etc.).

Code "4" (Air bag not reinstalled) refers to a situation where the bag is not repositioned, gas cannister is not charged, etc. following a deployment previous to the present accident.

Code "5" (Other restraint) is used when this same code is cited in variable O25.

It is suggested that the margin indicator which references the Vehicle Form be filled in with the response from the Vehicle Form to aid in the actual crosscheck prior to coding the investigator's final opinion.

Variable Name: Relation to Interviewee to Occupant

Format: 1 column - numeric

Beginning
Column 42

Element Values:

- 1 No interview
- 2 Same person
- 3 Other accident involved person (specify)
Uninvolved Person
- 4 Relative
- 5 Other uninvolved person (specify)
Combination of Persons
- 6 One of which was accident involved
- 7 None of which were accident involved
- 9 Unknown

Remarks:

NASS Injury Coding Conventions for the Occupant Injury Classification

Preliminary Draft: May 1, 1979

1. Pain (lesion = P) is always coded to the muscles (system = M). It cannot be coded to the joints, vertebrae, or skeletal system. The injury NPP-1 will henceforth be included in GEN/EXT for ISS.
2. How to choose which injuries to code. The following rules are given in the field forms.

"If there are six or less injuries listed in the O.I.C. reduction section, code all of the injuries ordered by Source of Data (1st -- hospital/medical, 2nd -- treating physician, or 3rd -- interviewee and other sources) and by AIS severity within source."

"If there are more than six injuries, order the injuries by source and by AIS severity within source. Code this ordering, injury by injury. If a group of ordered injuries has the same source, the same AIS, and the group includes at least the sixth and seventh injuries in the ordering, then a choice must be made as to which injury or injuries to code."

"Choose the injury or injuries that will enable the maximum number of different ISS body regions to be represented in the coded data. If no new ISS body region can be added, then simply code in accordance with the original ordering."

"If the occupant has less than six injuries, then the number of rows required to be completed is equal to the number of injuries plus one (e.g., no injuries requires one row, i.e., columns 36 to 43). In the additional row "not applicable" will be coded for all variables including AIS severity. In essence, "not applicable" means "no injury".

Other points to consider if you must make a choice: Try to associate contact points with individual injuries. List individual injured areas if possible, instead of lumping them together into a code of X,Y, or 0. For instance, if there are lacerations to both thigh and skin, code both TLLI-1 and LLLI-1 instead of YLLI-1.

3. A headache is coded HWKB-1 unless the ache can be located in a specific portion of the head (such as HLKB-1).

4. Lacerations are minor (--LI-1) unless they are "deep". "Deep" is defined as cutting into the subcutaneous tissue (the connective tissue, or muscle, beneath the skin). The number of sutures is not a determining factor. Extensive (AIS-2) is defined as >10 cm on the body or >5 cm on the face.

Abrasions and contusions are minor (--AI-1 or --CI-1) unless they are specified as "major." "Major" is defined as covering an area >50 cm² (9 in.²) on the body.

5. If the AIS can be determined to be one of two consecutive numbers, but you don't know which one, code the lower number. For instance, see the previous rule: if you have a thigh laceration, but you don't know if it is deep or not, code it as minor (TRLI-1). Again, a pelvic fracture of an unknown bone would be coded PUPS-2.
6. If a single contact causes multiple injuries to a body region, damage to each major layer should be coded. For example, broken ribs and hemothorax caused by the same steering column contact would be coded as two separate injuries. The only exception is if the two injuries are implicit in a single OIC code. For instance, a displaced skull fracture with cerebral lacerations is described by the single code H-LB-4 which is found in the OIC Dictionary. Similarly, in an open fracture the break in the skin is not coded since it is implied by the raised AIS.
7. Remember that, in NASS, there is no AIS = 0. "No injury" is coded AIS = 8.
8. If more than 3 or 4 ribs, on either or both sides of the chest, are fractured, look for possible respiratory embarrassment (flail chest) or other internal injuries such as hemothorax or aortic laceration in the medical report.
9. When transferring information from medical records into the skeletal diagram, be specific. Record the specific anatomic location and description of the injury. Use correct and precise medical terminology.
10. Do not code the same injury twice just because you hear about it from two different sources. In other words, code from the interview only those injuries which have not already coded from the medical records.

11. Code a stiff neck, neck ache, or muscle soreness as GEN/EXT. Note that there is no code for "whiplash." If whiplash is reported, look further in the medical record/discharge summary for a specific description of the injury: strain, sprain, contusion or fracture. If "whiplash" is the only description in the medical report, code it as strain, AIS-1.
12. Try to avoid using the AIS-7 and AIS-9 codes as much as possible. See rule #5 in this regard.
13. Note that a "multiple long bone fracture in same extremity" (arm or leg) has a higher AIS than a simple fracture. This phrase means "two or more different long bones fractured on the same limb" or "two or more fractures in the same long bone." This is an exception to rule #2: if two different long bones of same limb are fractured, do not code separately. Note also that if you are running out of coding room, fractures of both legs (or both arms) can be coded as bilateral (aspect = B).
14. The OIC dictionary is weak in listing and coding head injuries. If you can't find a specific AIS number in the dictionary for the injury you are trying to code, try to find one in the dictionary that's similar and use its AIS code.
15. The system/organ code assigns a code to major systems and assigns separate codes to significant organs within the system. The system code is to be used for all parts of the system which do not have individual codes. Thus, all digestive organs are coded D except for the liver, which is coded L.
16. The mouth, with the exception of the teeth, is coded as part of the digestive system (D). Teeth are skeletal (S).
17. The forehead is coded "face superior" (FS), not right or left.
18. Fractures and dislocations of joints are coded J for system, not S. See the dictionary, elbows and knees, for examples.
19. The W code for system is used for massive crushing, amputation or incineration injuries.
20. The OIC code to be applied for liver contusion is MRCL-3. Massive or extensive liver contusion should be coded MRCL-4.

21. Use W, 0 (body regions) only if 50% or more of body region is affected (W) or 50% or more of whole body surface (0).
22. Comminuted - definition: Fracture in which bone is broken into 3 or more fragments.
23. Code contusions as (for example, to the KNEE) K.CI-1 unless the contusion is specifically stated to be to the bone (..CS-__) or to the joint (K.CJ-__). In other words, if the medical or interview information indicates a contused knee, elbow, wrist, ankle, etc., the presumption should be that ..CI-1 is appropriate, unless bone or joint involvement is specified.

OCCUPANT FLRM

28
 035
 042
 049
 056
 063

Variable Name: 1st O.I.C. - Body Region
 2nd O.I.C. - Body Region
 3rd O.I.C. - Body Region
 4th O.I.C. - Body Region
 5th O.I.C. - Body Region
 6th O.I.C. - Body Region

Format: 1 column - alphanumeric

Beginning
 Column 43
 51
 59
 67
 75
 83

Element Values:

H	Head - skull	B	Back - thoracolumbar spine
F	Face	P	Pelvic - hip
N	Neck - cervical spine	Y	Lower extremities (leg)
S	Shoulder	T	Thigh
X	Upper extremities (arm)	K	Knee
A	Arm (upper)	L	Leg (lower)
E	Elbow	Q	Ankle - foot
R	Forearm	O	Whole body
W	Wrist - hand	U	Injured, unknown region
C	Chest	8	Not applicable
M	Abdomen	9	Unknown if injured

Remarks:

The O.I.C. body regions are mapped into the I.S.S. body regions as follows (Reference should also be made to: "The Abbreviated Injury Scale", 1976, pp. 19-20.):

028
035
042
049
056
063

Variable Name: 1st O.I.C. - Body Region (cont'd.)
2nd O.I.C. - Body Region (cont'd.)
3rd O.I.C. - Body Region (cont'd.)
4th O.I.C. - Body Region (cont'd.)
5th O.I.C. - Body Region (cont'd.)
6th O.I.C. - Body Region (cont'd.)

<u>O.I.C.</u>	<u>I.S.S. Body Region</u>
H - * - (Except - * E), N - * -	(1) Head or Neck
F - * -, H - * E - -	(2) Face
C - * -, B - S - *	(3) Chest
M - * -, B - I - *	(4) Abdominal or pelvic contents
+ * (+ includes S,P,X,A,E, R,W,Y,T,K,L, OR Q)	(5) Extremities or pelvic girdle
O - - -, U - - -, - - - *	(6) General (external)

*Included for general; excluded for the other five regions (specifically L,C,A,B, and H when H is combined as follows: H(R,L,B)HE, F(R,L,B)HE or FCHR

For coding the following situations the correct procedure is:

Not injured: $\frac{8}{43} \frac{8}{44} \frac{8}{45} \frac{8}{46} \frac{8}{47} \frac{9}{48} \frac{8}{49} \frac{8}{50}$

Injured, severity unknown: $\frac{U}{43} \frac{U}{44} \frac{U}{45} \frac{U}{46} \frac{7}{47} \frac{9}{48} \frac{7}{49} \frac{1,2,3,4,5, \text{ or } 6}{50}$

$\frac{8}{51} \frac{8}{52} \frac{8}{53} \frac{8}{54} \frac{8}{55} \frac{8}{56} \frac{8}{57} \frac{8}{58}$

Unknown if injured: $\frac{9}{43} \frac{9}{44} \frac{9}{45} \frac{9}{46} \frac{9}{47} \frac{9}{48} \frac{9}{49} \frac{9}{50}$

$\frac{8}{51} \frac{8}{52} \frac{8}{53} \frac{8}{54} \frac{8}{55} \frac{8}{56} \frac{8}{57} \frac{8}{58}$

Note: Be sure to complete one additional row with "8" and "98" when the person is injured but has less than six injuries. This is true even when the person is injured but the severity is unknown, or if it is unknown whether or not the person is injured. Refer to the last O.I.C. note on page 7.

OCCUPANT FORM

029
036
043
050
057
064

Variable Name: 1st O.I.C. - Aspect of Injury
2nd O.I.C. - Aspect of Injury
3rd O.I.C. - Aspect of Injury
4th O.I.C. - Aspect of Injury
5th O.I.C. - Aspect of Injury
6th O.I.C. - Aspect of Injury

Format: 1 column - alphanumeric

Beginning
Column 44
52
60
68
76
84

Element Values:

R	Right	S	Superior - upper
L	Left	I	Inferior - lower
B	Bilateral	W	Whole region
C	Central	U	Injured, unknown aspect
A	Anterior - front	8	Not applicable
P	Posterior - back	9	Unknown if injured

Remarks:

OCCUPANT FORM

030
037
044
051
058
065

Variable Name: 1st O.I.C. - Lesion
2nd O.I.C. - Lesion
3rd O.I.C. - Lesion
4th O.I.C. - Lesion
5th O.I.C. - Lesion
6th O.I.C. - Lesion

Format: 1 column - alphanumeric

Beginning
Column 45
53
61
69
77
85

Element Values:

L	Laceration	D	Dislocations
C	Contusion	N	Crushing
A	Abrasions	M	Amputation
F	Fractures	B	Burn
P	Pain	X	Asphyxia
K	Concussion	O	Other
H	Hemorrhage	U	Injured, unknown lesion
V	Avulsion	8	Not applicable
R	Rupture	9	Unknown if injured
S	Sprains		

Remarks:

OCCUPANT FORM

031
038
045
052
059
066

Variable Name: 1st O.I.C. - System Organ
2nd O.I.C. - System/Organ
3rd O.I.C. - System Organ
4th O.I.C. - System/Organ
5th O.I.C. - System Organ
6th O.I.C. - System, Organ

Format: 1 column - alphanumeric

Beginning
Column 46
54
62
70
78
86

Element Values:

S	Skeletal	G	Urogenital
V	Vertebrae	K	Kidneys
J	Joints	R	Respiratory
D	Digestive	P	Pulmonary - lungs
L	Liver	M	Muscles
N	Nervous system	I	Integumentary
B	Brain	W	All systems in region
C	Spinal cord	U	Injured, unknown system
E	Eyes - ears	8	Not applicable
A	Arteries - veins	9	Unknown if injured
H	Heart		
Q	Spleen		

Remarks:

OCCUPANT FORM

032
039
046
053
060
067

Variable Name: 1st O.I.C. - Abbreviated Injury Scale
2nd O.I.C. - Abbreviated Injury Scale
3rd O.I.C. - Abbreviated Injury Scale
4th O.I.C. - Abbreviated Injury Scale
5th O.I.C. - Abbreviated Injury Scale
6th O.I.C. - Abbreviated Injury Scale

Format: 1 column - numeric

Beginning
Column 47
55
63
71
79
87

Element Values:

- 1 Minor injury
- 2 Moderate injury
- 3 Severe injury
- 4 Serious injury
- 5 Critical injury
- 6 Maximum (untreatable)
- 7 Injured, unknown severity
- 8 Not applicable
- 9 Unknown if injured

Remarks:

AIS-7 indicates the presence of known injury but unknown injury severity, and the order of the AIS-7 injury code among the remaining injury codes is not indicative of the "probable" degree of severity (e.g. if the AIS-7 is listed first, it is not necessarily the most severe injury nor does it imply least severe if listed last).

OCCUPANT FORM

033
040
047
054
061
068

Variable Name: 1st O.I.C. - Injury Source
2nd O.I.C. - Injury Source
3rd O.I.C. - Injury Source
4th O.I.C. - Injury Source
5th O.I.C. - Injury Source
6th O.I.C. - Injury Source

Format: 2 columns - numeric

Beginning
Column 48
56
64
72
80
88

Element Values:

Front	25 Other occupants
01 Windshield	26 Interior loose objects
02 Mirror	29 Other interior objects
03 Steering assembly, including transmission selector lever when column mounted	Roof
04 Add-on equipment (e.g., CB tape deck, air conditioner)	31 Front header
05 Instrument panel and below, excluding foot controls and parking brake	32 Rear header
09 Other front object	33 Roof side rails
Side	34 Roof or convertible top
11 Side interior surface, excluding hardware or armrests	Floor
12 Side hardware or armrests	41 Floor
13 Roof pillar supports	42 Floor or console mounted transmission lever, including console
14 Window glass or frame	43 Parking brake handle
19 Other side object	44 Foot controls including parking brake
Interior	Rear
21 Seat, back support	51 Backlight (rear window)
22 Belt restraint system	52 Backlight storage rack, door, etc.
23 Head restraint	59 Other rear objects
24 Air cushion	Exterior of Occupant's Vehicle
	61 Hood
	62 Outside hardware (e.g., outside mirror, antenna)
	63 Other exterior surface or tires

OCCUPANT FORM

O33
O40
O47
O54
O61
O68

Variable: 1st O.I.C. - Injury Source (cont'd.)
2nd O.I.C. - Injury Source (cont'd.)
3rd O.I.C. - Injury Source (cont'd.)
4th O.I.C. - Injury Source (cont'd.)
5th O.I.C. - Injury Source (cont'd.)
6th O.I.C. - Injury Source (cont'd.)

69 Unknown exterior objects	80 Rear surface
Exterior of Other Motor	81 Undercarriage
Vehicle	Other Vehicle or Object in
71 Bumper	the Environment
72 Hood edge	86 Ground
73 Other front of vehicle	87 Other vehicle or object
74 Hood	89 Unknown vehicle or object
75 Hood ornament	Noncontact Injury
76 Windshield, roof rail,	90 Noncontact injury
A-pillar	source (e.g., impact
77 Side surface	force, heat or flame from
78 Side mirrors	fire, battery acid, etc.
79 Other side protrusions	97 Injured, unknown source
	98 Not applicable
	99 Unknown if injured

Remarks:

Interior flying glass refers to the person being struck by glass which has already fractured and is airborne. This is coded as "26" (Interior loose objects). This does not refer to a person causing glass to shatter upon their impacting it.

OCCUPANT FORM

Variable Name: 1st O.I.C. - Injury Data Source 034
 2nd O.I.C. - Injury Data Source 041
 3rd O.I.C. - Injury Data Source 048
 4th O.I.C. - Injury Data Source 055
 5th O.I.C. - Injury Data Source 062
 6th O.I.C. - Injury Data Source 069

Format: 1 column - alphanumeric Beginning
 Column 50
 58
 66
 74
 82
 Element Values: 90

Official	Unofficial
1 Autopsy records with or without hospital/medical records	4 Interviewee
2 Hospital/medical records without autopsy records	5 E.M.S. personnel
3 Treating physician	6 Police
	7 Other (specify)
	8 Not applicable
	9 Unknown

Remarks:

Code "1" (autopsy records with or without hospital/medical records) excludes records from lay, non-medical personnel; they must be the result of an autopsy by a physician or other similarity qualified life scientist.

Code "3" (Treating physician) refers to any physician who saw person and who has records that were used.

Code "4" (Interviewee) refers to the person who was interviewed to get the information on this form (not necessarily the person described on this form). The interviewee is defined in variable O27.

Code "5" (E.M.S. personnel) refers to a person certified by the state as trained in emergency medical service techniques. Code "5" should not be used for ambulance, police, etc. personnel not trained in E.M.S. techniques.

Code "6" (Police) can be used but only when no other source of injury information is available. See last sentence of first paragraph on page 6, Occupant Form.

Code "7" (Other) is used, for example, with data obtained from lay coroners.

Code "8" (Not applicable) is to be used when no injury was reported. In other words, this variable reports only the source of the injury information.

Variable Name: Injury Severity-Police Rating

Format: 1 column - numeric

Beginning
Column 91

Element Values:

- 1 K - Killed
- 2 A - Incapacitating injury
- 3 B - Nonincapacitating injury
- 4 C - Possible injury
- 5 O - No injury
- 9 Unknown

Remarks:

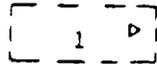
Code the police's reported injury severity for this occupant.

If the police report contains a detailed description of the injuries but does not translate the injuries into the KABCO codes, use the police method for doing so. For example, injuries which are considered to be of an incapacitating nature are classified as "A" (code "2"), non-incapacitating evident injuries are "B" (code "3"), and possible injuries are "C" (code "4"). Property damage only is classified as "O" (code "5").

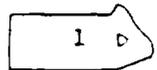
APPENDICES

UNIFORM SYMBOLS FOR ACCIDENT DIAGRAMMING

Vehicle and Pedestrian Symbols



Automobile (pre-impact or at-impact position) Exception: draw solid outline if stopped at-impact.



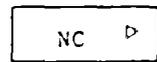
Automobile (final rest position-showing damaged area)



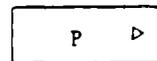
Automobile (final position on its top)



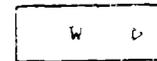
Automobile (final position on its right side) (reverse for left side)



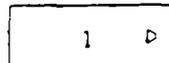
Automobile involved in the accident as as a temporary environmental factor, but not physically involved in the collision. (Non-Contact Unit)



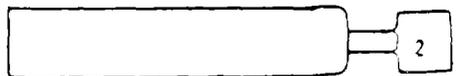
Parked automobile not struck (give it a number if it was struck)



Vehicle in which a witness was an occupant



Truck (Panel, Van, Dump, etc.)



Truck tractor and semi-trailer



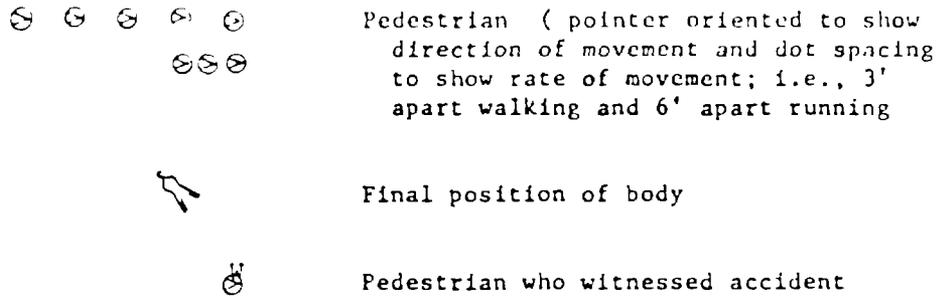
Utility trailer



Bus or streetcar



Motorcyclist; bicyclist (handlebars are curved opposite the direction of travel)



All symbols referring to colliding vehicles (plus Non-Contact, Witness and Parked vehicles) are to have a broken outline if they are moving at the point in which they are depicted; the outline should be solid if the vehicle is stopped where depicted, or at final rest. Be careful to insure proper placement (location) and orientation on the diagram.

SCENE ROAD MARKINGS



Point of impact



Skidmarks



Centripetal curve scuffs



Tire scuff marks



Rotating tire print



Gouges



Scratches



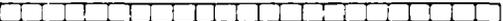
Liquids (puddle and run-off)

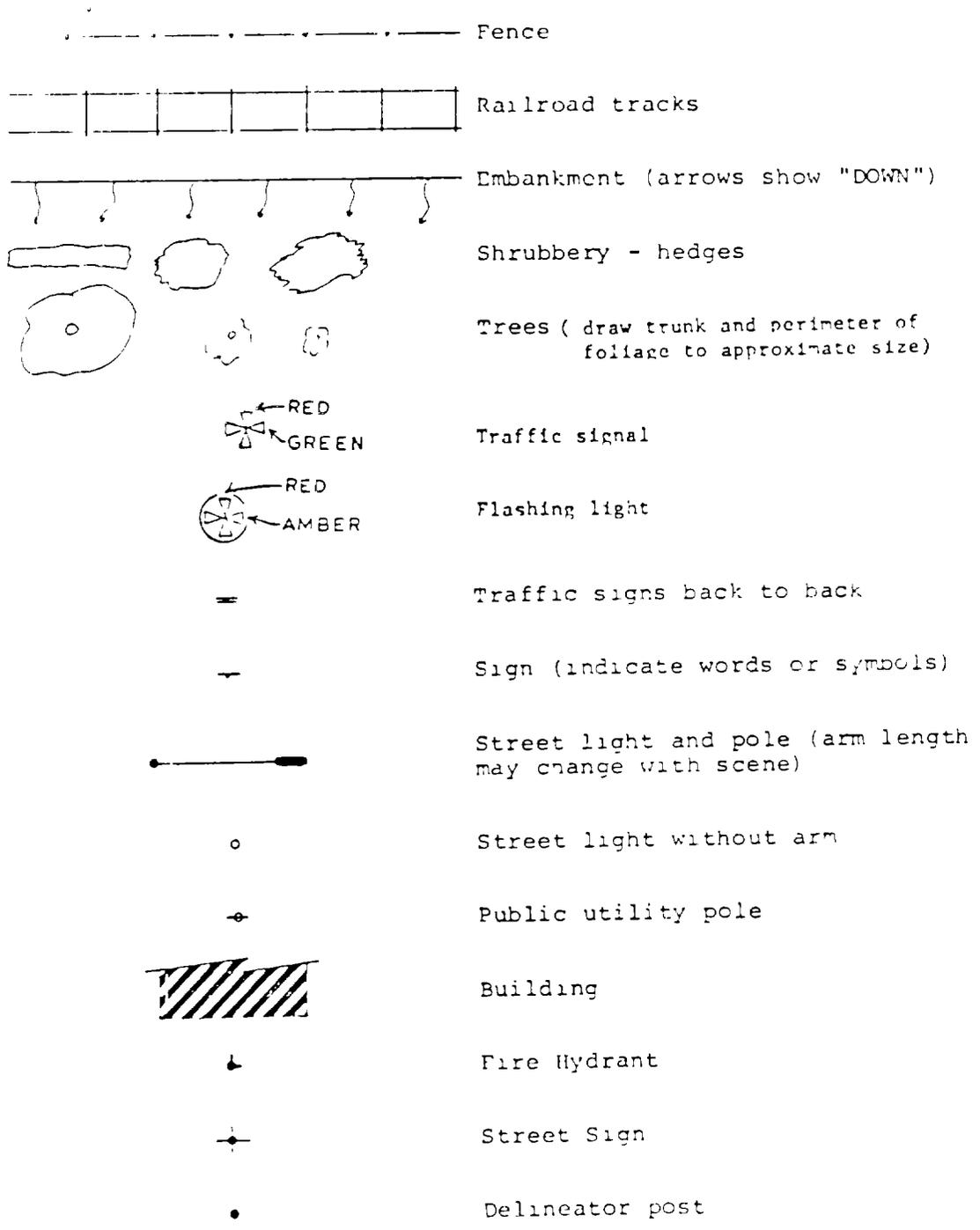


Debris (funnel out away from point of impact to show direction of force)

Any other accident-induced markings, components from vehicles, etc should be shown in their approximate location and a reasonable likeness sketched on the diagram. However, do not clutter diagram; make an additional diagram, if necessary.

Topographical Highway & Environment Symbols

-  Pavement edge
-  Shoulder edge line (non-formal)
-  Shoulder edge line (formal)
-  Broken center or lane lines (15' long - 25' apart)
-  Broken center line with No-Passing line
-  Double yellow center lines
-  Raised island and Grass median
-  Painted median
-  Curb
-  Paved shoulders with diagonal lines
-  Turn arrows
-  Wall
-  Bridge abutment and railing
-  Guard rail



All crosswalks, road surface symbols and other relevant markings should be depicted and drawn to approximate scale on the diagram as much as possible.

PHOTOGRAPHY

Case photographs are an important part of each NCSS report for several reasons: 1) they document details which are often difficult to describe, 2) they permit subsequent interpretation of factors which are not otherwise recorded and 3) they are essential in the quality control program to ensure that all teams interpret and record information uniformly.

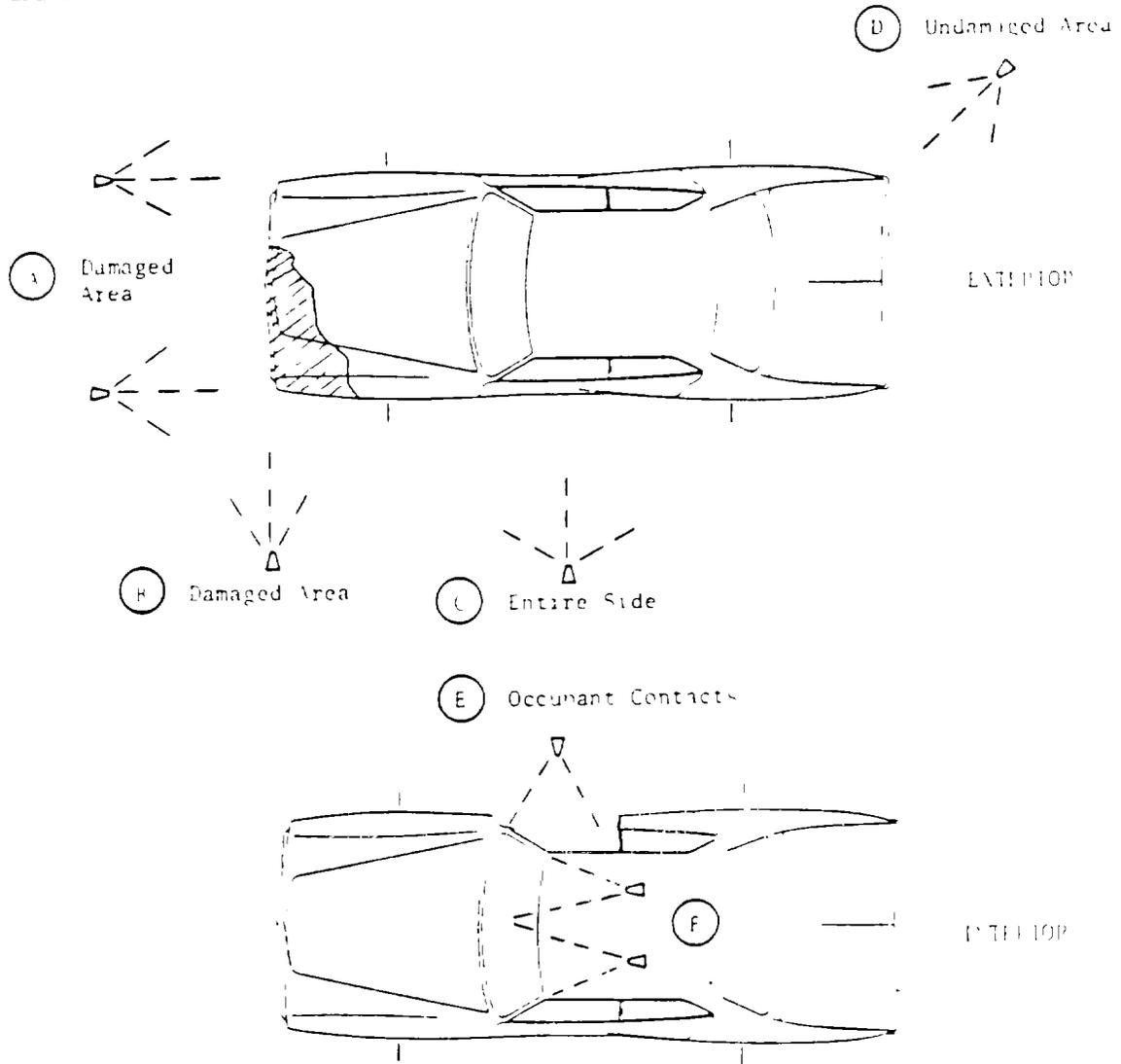
Equipment

Preferred equipment for this type of program is a 35 mm camera with an electronic flash unit. The use of a film such as Kodak Ektachrome-X, ASA 64 is recommended. Processing is simple and the ASA 64 film works well for the type of photography typically performed by accident investigators. In discussing investigation photography, it should be noted that a common error involves the failure to use the flash unit. Even in daylight, under overcast conditions or where background lighting is a problem, the flash should be used for vehicle exterior photography. The flash should be used for all interior photographs.

Photographic Coverage

Photographs in this study are taken for the specific purpose of documenting the condition of the vehicle interior and exterior (with emphasis on vehicle damage and occupant contact points) and the accident scene and scene evidence. The coverage indicated in the sketches in this section represents the minimum number of photographs required. At least 5 exterior and 3 interior photographs should be taken for each vehicle. Four scene photographs also are required as a minimum. It should be possible to complete most cases with one roll of 135-20 film. However, if it is clear that additional photographs are needed to include all necessary damage or evidence, they should be taken. The cost of a roll of film is far less than that of the data lost if a sufficient number of photographs are not taken.

VEHICLE DAMAGE AND INJURY IMPACT



NOTE: In any impact involving windshield or ejection, photo and diagrams should be made to properly document the extent. If additional photographs are needed to provide identification over the entire vehicle, they should be made.

Vehicle

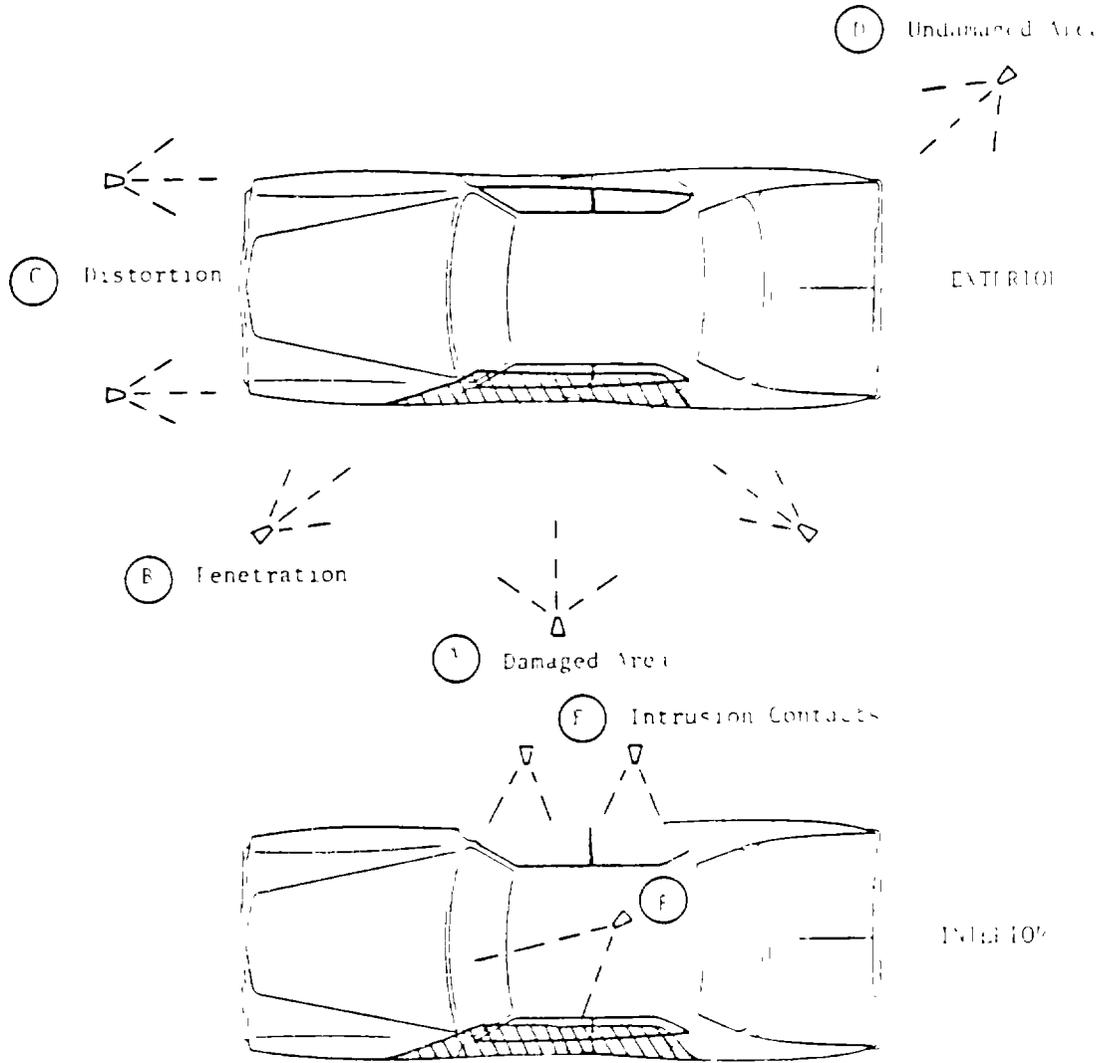
Photographs should be taken from a crouched position at a level slightly above the vehicle belt line. General camera placement for typical accident types is illustrated on the following page. In front impacts, a photograph should be taken from the front and directly along each side of the vehicle (A) to illustrate any body distortion. The photographs of the damaged area should include all damage. The photograph of the undamaged side should include the entire front of the vehicle.

A third photograph (B) should be taken at a right angle to the frontal damage photograph, from the side with the greatest vehicle crush. This photograph should provide a right angle view along the foremost part of the car. Photograph (C) is a centered side view of the entire car, and (D) is a three-quarter view of the two undamaged sides of the vehicle.

Interior photographs should include one from the right front door (E) (or left front, if necessary or appropriate) and two from the rear seat (F) to show occupant contacts. The latter should be taken of the left and right front half of the interior as illustrated. These views should overlap somewhat and include the area from the header to the lower instrument panel. If an additional photograph is needed to include a damaged floor pan, it should be taken. A close-up of contact areas or damage also would be useful.

In side impacts, a side photograph of the damaged area (A) and two angled photographs to show depth of penetration (B) -- one taken from forward and the other taken from the rear of the damaged area. Two photographs should be taken from either front or rear (as best illustrates any distortion or bowing of the vehicle) along the body line (C). A final three-quarter view should be taken of the undamaged side of the vehicle (D) (from the rear if the (B) photographs are from the front, and from the front if (C) photographs are taken from the rear).

VEHICLE SIDE IMPACT



NOTE: If an impact involves under-ride or over-ride, and a full failure of the structure is not shown, the impact is to be left undamaged. If a full failure of the structure is shown, it is to be considered a complete failure. The minimum velocity should be 30 ft/sec.

Two photographs should be taken of the front and rear interior from the side of the vehicle which was not impacted (F). These photographs are to show intrusion (or lack thereof) as well as occupant contacts. A final photograph from the rear seat into the left A-pillar and door area (F) to show occupant contacts. If rear occupants are present, a closeup of contacts would also be helpful.

Scene

In general, a photograph should be taken along the path of each vehicle from perhaps ten feet behind the first tire markings (if present). If vehicle path evidence extends considerably over fifty feet, another intermediate photograph, or two, would be helpful. The point of impact and vehicle rest positions should also be shown. Uniform symbols for scene marking, made with yellow lumber crayons or paint, should highlight the available physical evidence. The uniform symbols simplify the communication between the investigator and reviewer regarding interpretation of photographically depicted scene evidence.

PLACEMENT CAR CHARACTERISTICS

- o Curb Weight
- o Wheelbase
- o Overall Length
- o Overall Width
- o Overall Height

DOMESTIC - White Section

FORIEGN - Pink Section

1977 ■
1976 ■
1975 ■
1974 ■
1973 ■
1972 ■
1971 ■
1970 ■
1969 ■
1968 ■
1967 ■
1966 ■

OPERATIONAL RECORD

1978

Date and Model	Line										Total		Percentage	
	1	2	3	4	5	6	7	8	9	10	Sum	Avg	%	%
7/1/78	10	15	20	25	30	35	40	45	50	55	300	30	100	100
7/2/78	12	18	22	28	32	38	42	48	52	58	320	32	100	100
7/3/78	11	16	21	26	31	36	41	46	51	56	310	31	100	100
7/4/78	13	19	24	29	34	39	44	49	54	59	330	33	100	100
7/5/78	14	20	25	30	35	40	45	50	55	60	340	34	100	100
7/6/78	15	21	26	31	36	41	46	51	56	61	350	35	100	100
7/7/78	16	22	27	32	37	42	47	52	57	62	360	36	100	100
7/8/78	17	23	28	33	38	43	48	53	58	63	370	37	100	100
7/9/78	18	24	29	34	39	44	49	54	59	64	380	38	100	100
7/10/78	19	25	30	35	40	45	50	55	60	65	390	39	100	100
7/11/78	20	26	31	36	41	46	51	56	61	66	400	40	100	100
7/12/78	21	27	32	37	42	47	52	57	62	67	410	41	100	100
7/13/78	22	28	33	38	43	48	53	58	63	68	420	42	100	100
7/14/78	23	29	34	39	44	49	54	59	64	69	430	43	100	100
7/15/78	24	30	35	40	45	50	55	60	65	70	440	44	100	100
7/16/78	25	31	36	41	46	51	56	61	66	71	450	45	100	100
7/17/78	26	32	37	42	47	52	57	62	67	72	460	46	100	100
7/18/78	27	33	38	43	48	53	58	63	68	73	470	47	100	100
7/19/78	28	34	39	44	49	54	59	64	69	74	480	48	100	100
7/20/78	29	35	40	45	50	55	60	65	70	75	490	49	100	100
7/21/78	30	36	41	46	51	56	61	66	71	76	500	50	100	100
7/22/78	31	37	42	47	52	57	62	67	72	77	510	51	100	100
7/23/78	32	38	43	48	53	58	63	68	73	78	520	52	100	100
7/24/78	33	39	44	49	54	59	64	69	74	79	530	53	100	100
7/25/78	34	40	45	50	55	60	65	70	75	80	540	54	100	100
7/26/78	35	41	46	51	56	61	66	71	76	81	550	55	100	100
7/27/78	36	42	47	52	57	62	67	72	77	82	560	56	100	100
7/28/78	37	43	48	53	58	63	68	73	78	83	570	57	100	100
7/29/78	38	44	49	54	59	64	69	74	79	84	580	58	100	100
7/30/78	39	45	50	55	60	65	70	75	80	85	590	59	100	100
7/31/78	40	46	51	56	61	66	71	76	81	86	600	60	100	100

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
AMERICAN MOTORS—Gremlin 4					
Gremlin 6	96	166.5	71.1	51.4	2722
Pacer 6	100	172.1	77	52.8	3207
Pacer Wagon V 8	100	177	77	53.1	3452
Concero 4 dr 6	108	183.5	71.1	51.2	3062
Concord Wagon V 8	108	183.5	71.1	51.2	3337.8
Matador 2 dr 6	114	209.9	77.4	57.6	3127
Matador 4 dr V 8	118	214.3	77.3	53.9	3491
Matador Wagon V 8	118	219.2	77.2	55.9	4119.1
BUICK—Skyhawk V 6					
Skyhawk V 6	97	179.3	65.4	50.2	2888
Skyhawk V 8	111	200.2	72.2	53.7	3121
Skyhawk V 8	111	200.2	72.2	53.1	3518
Century 4 dr V 6	108.1	196	70.1	55	3122
Century 4 dr V 8	108.1	196	70.1	55	3170
Century Wagon V 6	108.1	196	70.1	55	3714
Regal V 6	108.1	200	70.1	53.4	3148
LeSabre 4 dr V 6	115.9	218.2	77.2	55.7	3510
LeSabre 4 dr V 8	115.9	218.2	77.2	55.7	3621
Electra V 8	118.9	227.1	77.2	56	3952
Estate Wagon V 8	115.9	218.2	75.9	51.9	4110
Riviera V 8	115.9	218.2	77.2	55	3607
CAVILLAC—Seville V 8					
DeVille Brougham V 8	121.5	227.2	76.4	53.3	4766
Eldorado V 8	126.3	234	74.8	54.2	4766
Limousine V 8	144.5	244.2	76.4	54.4	5244
CHEVROLET—Chevette 2 dr 4					
Chevette 4 dr 4	93.3	159.7	61.8	51.3	1991
Monza S 4	97	178	65.4	50	2660
Monza 2+2 4	97	179.3	65.4	50.2	2607
Monza Notchback 4	97	179.3	65.4	49.8	2700
Monza Wagon 4	97	178	65.4	51.8	2738
Nova 6	111	196	72.2	51.6	3267
Nova V 8	111	196	72.2	53.6	3444
Corrado 6	105	197.6	74.5	49.2	3403
Camaro V 8	108	197.6	74.5	49.2	3537
Malibu V 6	108.1	192	71.5	54.2	3113
Malibu V 8	108.1	192	71.5	54.2	3252
Malibu Wagon V 8	108.1	193.4	71.2	54.5	3435
Monte Carlo V 6	108.1	200.4	71.5	53.9	3741
Chevrolet 6	116	212.1	76	56	3638
Chevrolet V 8	116	212.1	76	56	3791
Chevrolet Wagon V 8	116	214.7	79.1	58	4123
Corvette V 8	98	165.2	69	48	3177
CHRYSLER—LeBaron 2 dr 6					
LeBaron 4 dr V 8	112.7	204.1	73.5	53.3	3525
LeBaron Wagon 4 dr V 8	112.7	206.1	73.3	55.3	3606
Cordoba V 8	114.9	215.8	77.1	53.1	4158
Newport V 8	123.9	227.1	79.5	54.7	4603
New Yorker V 8	123.9	231	79.5	54.7	4811
DODGE—Aspen 2 dr 6					
Aspen 4 dr V 8	108.7	197.2	73.3	53.3	3229
Aspen Wagon 6	112.7	201.2	73.3	55.3	3386
Aspen Wagon 6	112.7	201.2	73.3	55.7	3503
Diplomat 2 dr 6	112.7	204.1	73.5	53.3	3525
Diplomat 4 dr V 8	112.7	206.1	73.3	55.3	3611
Diplomat Wagon V 8	112.7	202.8	73.3	55.7	3763
Monaco 2 dr 6	114.9	213.2	77.1	52.9	3717
Monaco 4 dr V 8	117.4	218	77.1	54.3	3994
Monaco Wagon V 8	117.4	215	78.8	56.9	4418
Charge SE V 8	114.9	215.3	77.1	57.9	4032
Magnum SE V 8	114.9	215.8	77.1	53	4032

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
FORD—Futura 4					
Futura Wagon V 6	94.5	169.3	77.4	51.6	2747
Mustang II 4	96.2	175	70.2	50.4	2693
Mustang II V 8	96.2	175	70.2	50.3	2962
Fairmont 4 dr 4	105.5	193.9	71	51.9	2747
Fairmont Wagon 4 dr 6	105.5	193.9	71	51.9	2879
Fairmont Futura 2 dr V 8	105.5	193.9	71	51.9	2944
Granada 6	118.9	237.7	74	53.3	3299
Granada V 8	118.9	237.7	74	53.3	3344
LTD II 2 dr V 8	114	228.8	73.5	54	4100
LTD II 4 dr V 8	118	237.7	73.6	53	4070
Thunderbird V 8	114	215.5	74.5	53	4070
Ford V 8	101	171.1	65	44.6	1860
Ford Wagon V 8	121	225	74	54.7	4151
LINCOLN—Versailles V 8					
Continental V 8	126.3	234	74.5	54.1	3917
Mark V V 8	126.3	234	74.5	54.1	4211
MERCURY—Bobcat 4					
Bobcat Wagon V 6	94.5	169.3	77.4	51.6	2747
Zephyr 4 dr 4	105.5	193.9	71	51.9	2747
Zephyr Wagon 6	105.5	193.9	71	51.9	2879
Zephyr 2 V 8	105.5	193.9	71	51.9	2998
Monarch 6	109.9	207	71	51.9	3176
Monarch V 8	109.9	207	71	51.9	3156
Cougar 2 dr V 8	114	214.3	76	54	3911
Cougar 4 dr V 8	116	218.2	76	54	4102
Cougar XLT V 8	114	214.3	76	54	4071
Mercury 4 dr V 8	124	234	76	54	4517
Mercury Wagon V 8	127	237.7	76	54	4702
OLDSMOBILE—Starfire 4					
Omega V 6	97	179.3	65.4	50	2888
Omega V 8	111	196	72.2	53.1	3150
Cutlass Sedan 4 dr V 6	108.1	192	71.5	54.2	3113
Cutlass Wagon 4 dr V 8	108.1	192	71.5	54.2	3403
Cutlass Supreme V 8	109.9	207	71	51.9	3377
Delta 88 V 6	116	212.1	76	56	3638
Ninety Eight V 8	116	212.1	76	56	3791
Custom Cruiser V 8	116	214.7	79.1	58	4123
Toronado V 8	122	225	74	53.7	4767
PLYMOUTH—Volare 2 dr 6					
Volare 4 dr V 8	108.7	197.2	73.3	53.3	3229
Volare Wagon V 8	112.7	201.2	73.3	55.3	3386
Fury 2 dr 6	112.7	201.2	73.3	55.7	3653
Fury 4 dr V 8	114.9	213.2	77.1	52.9	3717
Fury Wagon V 8	117.4	218	77.1	54.3	3994
PONTIAC—Sunbird Notchback 4					
Sunbird Hatchback V 8	97	177.8	65.4	49.6	2742
Sunbird Wagon V 6	97	179.3	65.4	49.9	3129
Firebird V 8	97	177.8	65.4	51.8	2764
Firebird V 8	108.2	198.9	73.4	49.9	3129
Firebird V 8	108.2	196.8	73.4	49.3	3097
Phoenix V 6	111.1	203.4	73.2	53.2	3273
Phoenix V 8	111.1	203.4	73.2	53.2	3475
LeMans V 6	104.1	198.5	72.4	54.4	3150
LeMans Wagon V 8	106.1	197.8	72.6	54.8	3466
Grand Prix V 6	108.1	201.2	72.8	53.3	3163
Grand Prix V 8	108.1	201.2	72.8	53.3	3301
Pontiac V 6	115.9	214.3	76	54.5	3712
Pontiac Wagon V 8	115.9	215.1	80	57.3	4208

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
AMERICAN MOTORS—Gremlin 6	96	169.4	70.1	52.3	2761
Gremlin V 8	96	169.4	70.1	52.3	3010
Pacer 6	100	170	77	52.7	3180
Hornet 6	108	186	77	51.7	2905
Hornet V 8	108	186	77	51.7	3131
Malibu 2 dr V 6	114	209.4	77.4	51.8	3177
Malibu 4 dr V 8	116	216	75.7	54.7	3811
Malibu Wagon V 8	118	215.5	75.7	56.6	4065
BUICK—Skyhawk V 6	97	179.3	65.4	50.1	2492
Skyhawk V 6	111	200.3	72.7	53.7	3174
Skyhawk V 8	111	200.3	72.7	53.7	3543
Century 2 dr V 6	112	209.7	77	52.8	3117
Century 4 dr V 8	116	213.5	79	53.8	3469
Century Wagon V 8	116	218.2	79	55.3	4461
LeSabre V 6	124	226.9	79.9	54	4216
LeSabre Custom V 8	124	226.9	79.9	54	4478
Electra V 8	127	233.4	79.9	54.5	4597
Estate Wagon V 8	127	231.8	79.9	57.8	5137
Riviera V 8	122	227	79.9	53	4616
CADILLAC—Seville V 8	114.3	203.9	71.8	54.7	3141
Eldorado V 8	126.3	224.1	78.8	54.1	5231
Cala de Ville V 8	130	230.7	79.8	54.3	5217
Fleetwood Brougham V 8	133	233.7	79.8	55.3	5719
Fleetwood 75 V 8	151.5	252.2	79.8	57.4	5674
CHEVROLET—Chevette 4	94.3	158.7	61.8	52.3	3311
Vega 4	97	175.4	65.4	51.8	2723
Vega Wagon 4	97	175.4	65.4	51.8	2658
Monza Towne Coupe 4	97	177.8	65.4	49.8	2720
Monza 2+2 4	97	179.3	65.4	50.2	2783
Monza V 8	97	179.3	65.4	50.2	3185
Nova 6	111	196.7	72.2	53.6	3337
Nova V 8	111	196.7	72.2	53.6	3415
Camaro 6	106	195.4	74.4	49.2	3431
Camaro V 8	108	195.4	74.4	49.2	3621
Chevette 2 dr 6	117	205.7	76.9	53.3	3766
Chevette 4 dr V 8	116	209.7	76.9	54	4008
Chevette Wagon V 8	116	215.4	76.8	55.7	4351
Monte Carlo V 8	116	213.3	77.6	52.8	4023
Chevrolet V 8	121.5	222.7	79.5	54.7	4367
Chevrolet Wagon V 8	125	228.4	79.5	58.1	5013
Corvette V 8	98	185.2	69	48	3541
CHRYSLER—Cordoba V 8	115	215.3	77.1	52.6	4090
Newport V 8	124	227.1	79.5	55.2	4535
New Yorker V 8	124	231	79.5	54.5	4775
Town & Country Wagon V 8	124	227.7	79.4	57.6	5110
DODGE—Dart Sport 6	108	200.9	71.7	51.4	3013
Dart V 8	111	203.4	69.8	54	3275
Aspen 2 dr 6	108.5	197.5	72.8	51	3275
Aspen 4 dr V 8	112.5	201.5	72.8	54.8	3460
Aspen Wagon V 8	112.5	201.5	72.8	54.8	3600
Comet/Charger 2 dr 6	115	213.7	77.7	52.6	3130
Comet/Charger 4 dr V 8	117.5	218.4	77.7	54	4015
Comet/Charger V 8	117.5	225.6	76.8	55.8	4430
Charger SE V 8	115	215.3	77.7	52.6	4205
Magnum V 8	121.5	225.7	79.8	54.8	4750
Monaco Wagon V 8	124	229.5	79.4	57.6	4985

	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
FORD—Pinto 4	94.5	163	69.4	50.6	2572
Pinto Wagon 4	94.8	178.8	69.4	52	2754
Mustang II 4	95.2	175	70.2	50.3	2774
Mustang II V 8	96.2	175	70.2	50.3	3010
Maverick 2 dr 6	103	187	70.5	52.9	2660
Maverick 4 dr V 8	109.9	193.9	70.5	52.9	3165
Granada 6	109.8	197	70.5	50	3371
Granada V 8	109.9	197	70.5	53.2	3510
Torino 2 dr V 8	114	214.4	75.3	51.6	3117
Torino 4 dr V 8	118	217.4	74.2	53.1	3201
Torino Wagon V 8	118	223.2	74	54.9	3511
Elite V 2	114	216.4	75.5	51	3511
Ford LTD V 6	127	273.9	75.5	56.7	4511
Ford Wagon V 8	127	272.6	75.4	56.7	4859
Thunderbird V 8	120.4	220.8	79	51	4001
LINCOLN—Continental V 8	127	273.9	75.5	56.7	4511
Continental Mark V 8	127	273.9	75.5	56.7	4511
MERCUER—Bobcat 4	94.5	163	69.4	50.6	2572
Bobcat Wagon 4	94.8	178.8	69.4	52	2754
Comet 2 dr 6	103	187	70.5	52.9	2660
Comet 4 dr V 8	109.9	193.9	70.5	52.9	3165
Monarch 6	109.8	197	70.5	50	3371
Monarch V 8	109.9	197	70.5	53.2	3510
Montego 2 dr V 6	114	214.4	75.3	51.6	3117
Montego 4 dr V 8	118	217.4	74.2	53.1	3201
Montego Wagon V 8	118	223.2	74	54.9	3511
Lougar V 8	114	214.4	75.3	51.6	3117
Marquis V 8	127	273.9	75.5	56.7	4511
Marquis Wagon V 8	127	272.6	75.4	56.7	4859
OLDSMOBILE—Starfire V 6	97	179.3	65.4	50.1	2492
Omega 6	111	199.6	72.9	54.3	3174
Omega V 8	111	199.6	72.9	54.3	3543
Cutlass 2 dr 6	112	211	76.0	52.4	2751
Cutlass 4 dr V 8	116	215.7	76.7	54	2911
Cutlass Wagon V 8	116	219.4	77.1	56.4	4491
Delta 88 V 8	124	226.9	79.9	54	4216
Ninety Eight V 8	127	233.4	79.9	54.5	4597
Custom Cruiser V 8	127	231.8	79.9	57.8	5137
Toronado V 8	122	227	79.9	53	4616
PLYMOUTH—Valiant Duster 6	108	200.9	71.7	51.4	3013
Valiant V 8	111	203.4	69.8	54	3275
Volare 2 dr 6	108.5	197.5	72.8	51	3275
Volare 4 dr V 8	112.5	201.5	72.8	54.8	3460
Volare Wagon 6	112.5	201.5	72.8	54.8	3600
Fury 2 dr 6	115	213.7	77.7	52.6	3130
Fury 4 dr V 8	117.5	218.4	77.7	54	4015
Fury Wagon V 8	117.5	225.6	76.8	55.8	4430
Gran Fury V 8	121.5	225.7	79.8	54.8	4750
Gran Fury Wagon V 8	124	229.5	79.4	57.6	4985
PONTIAC—Astre 4	97	179.3	65.4	50.1	2492
Astre Safari 4	97	177.8	65.4	49.8	2720
Sunbird 4	97	177.8	65.4	49.8	3010
Sunbird V 6	97	177.8	65.4	49.8	3275
Ventura 6	111	199.6	72.9	54.3	3174
Ventura V 8	111	199.6	72.9	54.3	3543
Firebird 6	108.1	196.9	72	49.1	3130
Firebird V 8	108.1	196.9	72	49.1	3460
LeMans 2 dr 6	112	211	76.0	52.4	2751
LeMans 4 dr V 8	116	215.7	76.7	54	2911
LeMans Wagon V 8	116	219.4	77.1	56.4	4491
Grand Prix V 8	116	214.4	75.3	51.6	3117
Pontiac F	123.4	226	79.6	54.7	4511
Safari Wagon V 8	127	233.4	79.9	54.5	4597

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Empty Weight (lbs.)
AMERICAN MOTORS—Gremlin 6					
Hornet 6	108	179.3	70.6	52.7	2814
Hornet V 8	108	179.3	70.6	52.7	3031
Rebel 6	114	199.0	77.2	55.0	3210
Rebel V 8	114	199.0	77.2	55.0	3371
Ambassador 6	122	208.0	77.2	55.2	3409
Ambassador V 8	122	208.0	77.2	55.2	3604
Javelin 6	109	191.0	71.9	51.5	2911
Javelin V 8	109	191.0	71.9	51.5	3178
AMC V 8	97	179.0	71.6	51.4	3192
BUICK Skylark 6					
Skylark Custom V 8	116	206.2	77.3	54.0	3341
Skylark Custom V 8	116	206.2	77.3	54.0	3676
Sportwagon V 8	116	212.6	77.3	57.0	4054
GS V 8	112	202.2	77.3	53.1	3560
GS 455 V 8	112	202.0	77.3	53.0	3769
LeSabre V 8	124	220.2	80.0	55.4	4169
LeSabre 454 V 8	124	220.2	80.0	55.4	4310
Wildcat Wagon V 8	124	223.3	80.0	57.1	4532
Wildcat Custom V 8	124	220.2	80.0	54.4	4357
Electra 225 V 8	127	225.8	80.0	55.9	4517
Electra V 8	110	215.5	79.3	53.6	4342
CADILLAC—Catalina De Ville					
Fleetwood Eldorado	120.0	221.0	79.9	53.7	4728
Fleetwood 60 Special	133.0	228.5	79.8	56.6	4933
Fleetwood 75 Limousine	149.8	245.5	79.8	58.1	5778
CHEVROLET—Comaro 6					
Comaro V 8	108.0	188.0	74.4	50.5	3166
Comaro V 8	108.0	188.0	74.4	50.5	3276
Chery Nova 4	111.0	189.4	72.4	53.8	2937
Chery Nova 6	111.0	189.4	72.4	53.8	3037
Chery Nova 8	111.0	189.4	72.4	53.8	3166
Chevelle 6	116.0	201.2	75.4	53.2	3327
Chevelle 6 7 dr	112.0	197.2	75.4	52.6	3303
Chevelle V 8	116.0	201.2	75.4	53.2	3434
Chevelle Wagon V 8	116.0	206.5	75.4	55.1	3872
Monte Carlo V 8 2 dr	116.0	205.8	75.6	52.6	3563
Chevrolet 6	119.0	216.0	79.8	56.0	3729
Chevrolet V 8	119.0	216.0	79.8	56.0	3888
Chevrolet Wagon V 8	119.0	216.7	79.8	57.1	4333
Corvair	98.0	182.5	69.0	47.4	3285
CHRISTLER—Newport V 8					
300	124	224.7	79.1	55.9	4265
New Yorker	124	224.7	79.1	55.9	4590
Town & Country	122	224.8	79.1	55.3	4740
DODGE—Dart 6					
Dart V 8	111	196.2	69.7	54.0	3015
Dart V 8	111	196.2	69.7	54.0	3094
Dart Swinger 340 V 8	111	196.2	69.7	54.0	3285
Coronet 6	117	209.2	76.7	54.7	3270
Coronet Wagon V 8	117	211.7	76.7	56.4	3794
Coronet V 8	117	209.2	76.7	54.7	3371
Coronet Super Brg V 8	117	209.2	76.7	53.0	3575
Coronet R T V 8	117	209.2	76.7	53.0	3635
Challenger 6	110	191.3	76.1	50.9	3114
Challenger V 8	110	191.3	76.1	50.9	3185
Challenger R T V 8	110	191.3	76.1	50.9	3550
Charger 6	117	208	76.6	53.0	3345
Charger V 8	117	208	76.6	53.0	3445
Charger R T 500 V 8	117	208	76.6	53.0	3770
Plaza Custom V 8	122	219.9	79.7	55.7	3991
Plaza V 8	122	219.9	79.7	55.7	4140
Plaza Wagon V 8	122	222.6	79.7	58.3	4447
FORD—Mustang 6					
Falcon 6	117.0	206.2	76.4	52.2	3242
Falcon V 8	117.0	206.2	76.4	53.0	3748
Falcon Wagon	114.0	209.0	75.4	55.9	3635
Mustang 6	108.0	187.4	71.7	51.5	2875
Mustang V 8	108.0	187.4	71.7	51.5	3098

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Empty Weight (lbs.)
Mustang Mach 1	108.0	187.4	71.7	51.6	2945
Mustang Boss 302	108.0	187.4	71.7	51.6	3122
Mustang Boss 429	108.0	187.4	71.7	51.6	3508
Torino 6	117.0	206.2	76.7	52.2	3315
Torino V 8	117.0	206.2	76.7	53.0	3371
Torino 500 Wagon	114.0	209.0	75.4	54.9	3695
Torino Cobra	117.0	206.2	76.8	51.7	3915
Fairlane 500 6	117.0	206.2	76.7	52.2	3272
Fairlane 500 V 8	117.0	206.2	76.7	53	3258
Fairlane 500 Wagon	114.0	209.0	75.4	55.9	3855
Ford Custom Galaxie 6	121	213.9	79.8	54.9	3738
Ford Custom V 8	121	213.9	79.8	54.9	3738
Ford Custom Wagon	121	216.9	79.8	56.8	4136
Ford Galaxie 500 V 8	121	213.9	79.8	54.6	3822
Ford LTD V 8	121	216	79.8	53.6	3847
Ford LTD V 8	121	216	79.8	54.9	3791
Thunderbird V 8	114.7	212.5	78	54.4	4484
Thunderbird 4 Door V 8	117.2	215	77.4	54.4	4653
IMPERIAL—Crown	127	229.7	79.1	55.7	4611
LINCOLN CONTINENTAL					
Continental Mark III	127.0	225.0	79.6	55.7	4911
Continental Mark III	127.0	226.1	79.4	55.7	4916
MERCURY—Montego 6					
Montego Wagon	114.0	211.8	75.4	55.7	3744
Montego V 8	117.0	209.9	77.3	53.1	3414
Cyclone V 8	117.0	209.9	77.3	54.1	3611
Cougar V 8	111.1	196.1	74.1	51.5	2940
Monterey V 8	124.0	221.8	79.8	54	4131
Monterey Wagon	121.0	220.5	79.8	56.8	4437
Marauder V 8	121.0	219.1	79.7	52.6	4339
Marauder V 8	124.0	224.3	79.8	54.1	4312
OLDSMOBILE—F 85 Cutlass 6					
F 85 Cutlass V 8	116	207.2	76.8	53.5	3611
4 2 V 8	112	203.2	76.2	52.8	3771
Delta Cruiser V 8	121	218.2	77.2	58.6	4182
Delta 88 V 8	124	219.1	79.9	55.5	4078
Delta 88 Custom Royale V 8	124	219.1	79.9	55.5	4174
Ninety Eight V 8	127	225.2	80.0	55.8	4157
Toronado V 8	119	214.3	78.8	52.8	4494
PLYMOUTH—Valiant 6					
Valiant V 8	108	188.4	71.1	54.0	3145
Valiant 6	108	188.4	71.1	54.1	2925
Barracuda 6	108	186.7	74.9	53.8	3120
Barracuda V 8	108	186.7	74.9	53.9	3167
Barracuda 6	116	204	76.4	54.8	3240
Barracuda Wagon	117	209.1	76.4	56.4	3770
Barracuda V 8	116	204	76.4	54.8	3340
Barracuda Road Runner V 8	116	204	76.4	53.3	3640
Sport Satellite Wagon V 8	117	209.1	76.4	56.4	3910
Barracuda GTX V 8	116	204	76.4	53.2	3660
Fury 6	120	214.9	79.6	53.8	3740
Fury V 8	120	214.9	79.6	53	3845
Fury Wagon	120	220.6	79.6	56.3	4450
PONTIAC—Tempest 6					
Tempest V 8	116	206.5	76.7	52.6	3396
LeMans Sports Safari	116	210.6	76.7	54.5	4038
GTO V 8	112	201.9	74.7	51.2	3281
Catalina V 8	122	217.9	79.8	54.8	4167
Catalina Wagon	122	220.9	79.8	56.1	4448
Executive V 8	125	223.9	79.8	55.0	4206
Bonneville V 8	125	224.6	79.8	55.0	4358
Grand Prix V 8	118	210.2	75.7	52.0	3936
Firebird 6	108.0	191.6	73.4	50.4	2741
Firebird Spirit V 8	108.0	191.6	73.4	50.4	3324

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
AMERICAN MOTORS—Gremlin 6	96	170.3	70.6	52.3	2729
Gremlin V-8	96	170.3	70.6	52.3	2990
Marine 6	108	187	71	51.7	2821
Marine V-8	108	187	71	51.7	3081
Tempra 6	110	195.3	75.4	51.3	2929
Tempra V-8	110	195.3	75.4	51.3	3187
Matador 2 dr 6	114	209.4	77.4	51.8	2659
Matador 2 dr V-8	114	209.4	77.4	51.8	3866
Matador 4 dr 6	118	216	77.3	54.5	3047
Matador 4 dr V-8	118	216	77.3	54.5	3854
Ambassador V-8	122	219.3	77.3	54.4	4239
BUICK—Apollo 6	111	210.3	72.7	52.8	3354
Apollo 4 dr 8	111	200.3	72.7	52.8	3449
Century 350 V-8	116	213.5	79.0	54	4
Century Rega 2 dr V-8	117	212.0	79.0	53.0	4146
Century 350 Wagon V-8	116	218.2	79.0	55	450
LeSabre V-8	124	225.9	79.9	54.0	4451
Wildcat Wagon V-8	127	231.1	79.9	57.0	5218
Electra V-8	127	231.5	79.9	55.0	4847
Wildcat V-8	122	226.4	80.0	53.7	4232
CADILLAC—Calais DeVille	130	230.7	79.8	54.4	5174
El Dorado	126.3	224.1	79.8	54	5105
Fleetwood Brougham	133.0	233.7	79.8	55.6	5298
Fleetwood Seville Five	135.5	252.2	79.8	57	6032
CHEVROLET—Vega	97.0	175.4	65.4	51.9	2446
Vega Wagon	97.0	175.4	65.4	52.0	2587
Camaro 6	108.0	195.4	74.4	49.2	3433
Camaro V-8	108.0	195.4	74.4	49.2	3534
Nova 6	111.0	196.7	72.4	53.9	3254
Nova V-8	111.0	196.7	72.4	53.9	3392
Chevelle 2 dr 6	112.0	205.2	76.6	53.1	3681
Chevelle 4 dr V-8	116.0	209.7	76.6	53.8	3863
Chevelle Laguna S J V-8	112.0	205.8	76.6	53.1	4061
Engelbert Wagon V-8	116.0	215.2	76.6	55.7	4298
Monte Carlo	116.0	212.7	77.6	52.7	4036
Rel Air Impala V-8	121.5	222.7	79.5	54.5	4281
Caprice Classic V-8	121.5	222.7	79.5	54.5	4422
Chevrolet Wagon V-8	125.0	238.3	79.5	58.1	4944
Corvette	98.0	185.3	69.0	47.7	3390
CHRISTLER—Newport V-8	124	225	79.5	53.3	4569
New Yorker V-8	124	225	79.5	53.6	4690
Town & Country V-8	124	224.7	79.4	59.1	5040
Imperial V-8	124	221.1	79.7	54.7	4955
DCDGE—Dart 6	111	201.7	69.6	54.1	3135
Dart Sport 6	108	200.0	71.8	53.1	3070
Dart V-8	111	203.2	69.6	54.1	3230
Coronet 4 dr 6	118	212.4	77.8	53.6	3610
Coronet 4 dr V-8	118	212.4	77.8	53.6	3685
Charger V-8	115	214	77	52.5	3150
Coronet Wagon V-8	118	220.7	78.8	56.4	4085
Comet V-8	112	220.5	74.3	54.8	4111
Mustang Wagon V-8	112	222.6	74.4	58.5	4885
FORD—Pinto	94.2	169	69.4	50.3	2443
Ford Wagon	94.2	178.8	69.7	51.9	2647
Mustang II 4	96.2	175	70.2	49.9	2173
Mustang V-8	96.2	175	70.2	49.6	2473
Maverick 2 dr 6	103	187	70.5	53	2852
Maverick 4 dr 6	109.9	193.9	70.5	54.8	2944
Maverick 2 dr V-8	103	187	70.5	53.0	3025

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
FORD—Torino 2 dr V-8	114	211.4	79.3	52.8	3944
Torino 4 dr V-8	118	215.4	79.3	53.5	4118
Torino Wagon V-8	118	220.4	79	54.4	4417
Gran Torino Elite V-8	114	216.1	78.5	52.8	4267
Ford Ranch Wagon Country Sedan V-8	121	222.4	79.7	54.9	4307
Country Squire V-8	121	225.1	79.9	56.5	4819
Thunderbird V-8	120.4	224.8	79.7	53	5011
LINCOLN CONTINENTAL—V-8	127.2	233	80	55.5	5111
Continental Mark IV V-8	120.4	228.3	79.6	53.3	5011
MERCURY—Comet 2 dr 6	103	190	70.5	51.7	2617
Comet 4 dr 6	109.9	196.9	70.5	52.8	2911
Comet 4 dr V-8	109.9	196.9	70.5	52.0	3134
Cougar V-8	114	215.5	78.5	52.1	4211
Moniega 2 dr V-8	114	215.5	78.6	51.8	3917
Moniega 4 dr V-8	118	219.5	78.6	53.5	4111
Moniega Wagon V-8	118	224.4	79.6	54.4	4426
Monterey V-8	124	226.8	76.6	54.1	4111
Monterey Wagon V-8	124	225.7	79.8	56.5	4577
Marquis V-8	124	226.8	76.6	54.7	4773
OLDSMOBILE—Omega 2 dr 6	111.0	199.5	72.8	52.4	3334
Omega 2 dr V-8	111.0	199.5	72.8	52.4	3474
Cutlass 2 dr V-8	112.0	210.6	76.5	53.4	3584
Cutlass 4 dr V-8	116.0	214.6	76.5	56	4140
Cutlass Supreme 2 dr V-8	112.0	211.5	76.5	53.2	3688
Cutlass Supreme 4 dr V-8	116.0	215.5	76.5	56	4181
Cutlass Wagon V-8	116.0	220.0	76.8	55.5	4485
Delta 88 V-8	124.0	226.9	79.8	53.1	4111
Custom Cruiser V-8	127.0	231.2	80.0	54.0	5111
Ninety Eight V-8	127.0	232.4	79.8	54.2	4178
Toronado V-8	122.0	228.0	79.5	53.3	4138
PLYMOUTH—Valiant Duster 6	94	191	71.8	53	3155
Valiant Scamp 6	111	197.6	71	54.3	3115
Valiant V-8	111	197.6	71	54.3	3111
Satellite 6 2 dr	115	212.4	79	51.2	3111
Satellite V-8 4 dr	117	213.3	78.6	51.7	3111
Satellite Wagon V-8	117	217.1	79.2	56.4	4111
Road Runner V-8	115	212.4	79.1	52.5	3111
Fury V-8	122	219.9	79.9	54.8	4115
Fury Wagon	124	223.3	79.4	58.5	4170
PONTIAC—Ventura 6 2-dr Coupe	111	199.4	72.5	51.8	3357
Ventura V-8 4 door	111	199.4	72.5	53	3111
LeMans 2 dr 6	112	208	77.9	52.3	3665
LeMans 4 dr V-8	116	212	77.9	51.9	3111
LeMans Safari V-8	116	215.7	78	51	4111
Grand Am V-8 4 door	116	214.9	77.3	52.9	4111
Firebird 6	108	196	73.4	49.2	3390
Firebird V-8	108	196	73.4	49.2	3111
Trans Am V-8	108	196	73.2	46.6	3761
Catalina V-8 2-dr Hardtop	124	225.2	79.6	53.3	4419
Solar Wagon V-8	127	230.6	74.6	58.1	5181
Bonneville V-8 4-door Hardtop	124	225.2	79.6	53	4184
Grand Bulb Wagon V-8	127	231.6	74.6	58.1	5111
Grand Ville V-8 4 dr Hardtop	124	226	79.6	54	4555
Grand Prix V-8	116	217.5	77.9	52.6	4231

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
AMERICAN MOTORS—Gremlin 6	96	165.5	70.6	53.4	2702
Gremlin V-8	96	165.5	70.6	53.4	2959
Hornet 6	108	184.9	71.0	52.9	2884
Hornet V-8	108	184.9	71.0	52.9	3127
Javelin 6	110	192.3	75.4	51.3	2898
Javelin V-8	110	192.3	75.4	51.3	3134
Maldor 6	118	208.5	77.3	55.5	3340
Maldor V-8	118	208.5	77.3	55.5	3553
Ambassador V-8	122	212.9	77.3	55.9	3814
BUICK—Appalo 6	111	197.9	72.4	53.9	3342
Appalo V-8	111	197.9	72.4	53.9	3342
Century V-8	116	212.4	78.0	54.4	3922
Century Regal (2 dr.) V-8	112	210.7	78.0	53.5	3892
Century Wagon V-8	116	216.6	78.0	55.5	4325
Century Luxus Wagon V-8	116	216.6	78.0	55.5	4350
LeSabre V-8	124	224.2	79.6	53.8	4389
Centurian V-8	124	224.2	79.6	53.8	4459
Elite Wagon V-8	127	229.5	79.6	57.3	5110
Electra V-8	127	229.8	79.3	54.9	4724
Riviera (2 dr.) V-8	127	223.4	79.9	54.0	4647
CADILLAC—Calais DeVille	130	228.5	79.8	54.6	4996
Eldorado	126.3	222.0	79.8	53.9	4777
Fleetwood Brougham	133.0	231.5	79.8	55.5	5145
Fleetwood Seventy-five	151.5	250.0	79.8	57.8	5783
CHEVROLET—Vega	97.0	172.2	65.4	51.9	2268
Vega Wagon	97.0	172.2	65.4	52.0	2376
Camaro 6	108.0	188.4	74.4	49.1	3205
Camaro V-8	108.0	188.4	74.4	49.1	3435
Camaro LT	108.0	188.4	74.4	49.1	3435
Nova 6	111.0	194.3	72.4	53.9	3169
Nova V-8	111.0	195.1	72.4	53.9	3338
Chevette 2 dr. 6	112.0	202.9	76.6	53.1	3533
Chevette 4 dr. V-8	116.0	206.9	76.6	53.8	3695
Chevette Laguna 2 dr. V-8	112.0	203.9	76.6	53.1	3788
Chevette Wagon V-8	116.0	213.3	76.6	53.8	4138
Monte Carlo	116.0	210.4	77.6	52.7	3823
Bel Air 6	121.5	221.9	79.5	54.5	4041
Bel Air Impala V-8	121.5	221.9	79.5	54.5	4284
Caprice V-8	121.5	221.9	79.5	54.5	4322
Chevrolet Wagon V-8	125.0	226.8	79.5	58.3	4856
Corvette	98.0	184.7	69.0	47.7	3407
CHRYSLER—Newport V-8	124	230.1	79.4	56.2	4315
New Yorker V-8	124	230.8	79.4	56.4	4470
Town & Country V-8	122	229.6	79.4	58.0	4790
Imperial V-8	127	235.3	79.6	55.6	5020
DODGE—Dart 6	111	203.8	69.6	54.1	3010
Dart Sport 6	108	200.0	71.8	53.1	2920
Dart V-8	111	203.8	69.6	54.1	3045
Challenger V-8	110	198.2	76.4	50.9	3243
Coronet 4 dr. 6	118	212.9	77.8	53.6	3550
Charger 2 dr. 6	115	212.7	77.0	52.2	3505
Charger V-8	115	212.7	77.0	52.5	3590
Coronet Wagon V-8	118	212.6	78.8	56.4	4075
Polara V-8	122	226.6	79.6	56.1	3980
Monaco V-8	122	228.7	79.6	56.3	4140
Polara Wagon V-8	122	227.9	79.6	57.8	4540
Monaco Wagon V-8	122	230.1	79.6	57.8	4590
FORD—Pinto	94.2	164.5	69.4	49.6	2216
Pinto Wagon	94.2	173.8	69.4	51.3	2490
Maverick 2 dr. 6	103	183.3	70.5	52.9	2757
Maverick 4 dr. 6	109.9	190.2	70.5	52.9	2736
Maverick 2 dr. V-8	103	183.3	70.5	53.0	2812
Mustang 6	109	193.8	74.1	50.7	3229
Mustang V-8	109	193.8	74.1	50.7	3227
Mustang Mach 1302 V-8	109	193.8	74.1	50.0	3216
Torino 4 dr. 6	118	212	79.3	53.0	3746
Torino 2 dr. 6	114	208	79.3	52.1	3678
Torino 4 dr. V-8	118	212	79.3	53.0	3838
Torino Wagon V-8	118	215.6	79.0	55.0	4214
Ford Cus 500 Galaxie LTD V-8	121	219.5	79.5	54.3	4292
Ford Country Sedan V-8	121	223.4	79.9	57.1	4790
Thunderbird V-8	120.4	218.9	79.7	53.1	4742
LINCOLN CONTINENTAL V-8	127	229.9	79.6	54.5	5210
Continental Mark IV V-8	120.4	223.3	79.8	53.4	5044
MERCURY—Comet 2 dr. 6	103	185.4	70.5	53.0	2782
Comet 4 dr. 6	109.9	192.3	70.5	53.1	2877
Comet V-8	109.9	192.3	70.5	53.1	2877
Cougar V-8	112.1	199.7	75.0	50.7	3516
Montego 2 dr. 6	114	211.3	78.6	52.2	3790
Montego 4 dr. 6	118	215.3	78.6	52.9	3854
Montego V-8	118	215.3	78.6	52.9	3854
Montego Wagon V-8	118	218.5	79.6	54.9	4262
Monterey V-8	124	222.5	79.6	54.6	4464
Monterey Wagon V-8	121	223.4	79.8	57.0	4887
Marquis V-8	124	222.5	79.6	54.6	4739
OLDSMOBILE—Omega 6	111.0	197.5	72.4	53.8	3290
Omega V-8	111.0	197.5	72.4	53.8	3490
Cutlass 2 dr. V-8	112	207	76.5	53.3	3637
Cutlass 4 dr. V-8	116.0	211.0	76.5	54.0	3905
Cutlass Supreme 2 dr. V-8	112.0	208.9	76.5	53.1	3810
Cutlass Supreme 4 dr. V-8	116.0	212.9	76.5	54.0	3924
Cutlass Wagon V-8	116.0	219.3	76.8	55.3	4356
Delta 88 V-8	124.0	225.0	79.5	54.3	4368
Ninety Eight V-8	127.0	233.3	79.6	54.7	4662
Custom Cruiser V-8	127.0	228.3	79.5	57.2	5058
Toronado V-8	122.0	226.8	79.8	53.2	4794
PLYMOUTH—Valiant 6	108	195.8	71.0	54.3	2965
Valiant V-8	108	195.8	71.0	54.3	3045
Valiant Stramp V-8	111	199.6	71.0	52.8	3080
Barracuda V-8	108	193.0	75.6	50.9	3195
Cuda V-8	108	193.0	75.6	51.3	3325
Satellite 6 2 dr	115	210.8	79.1	52.7	3480
Satellite V-8 4 dr	117	213.3	78.6	53.7	3625
Satellite Wagon V-8	117	216.1	79.2	56.4	4055
Road Runner V-8	115	210.8	79.1	52.5	3610
Fury V-8	120	223.4	79.8	56.1	3980
Fury Wagon	122	227.5	79.8	57.8	4335

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
PONTIAC—Ventura 6 2 dr. Coupe	111	197.5	71.4	51.6	3174
Ventura V 8 4-door	111	197.5	72.4	53.9	3446
LeMans 2 dr. 6	112	207.4	77.7	52.9	3609
LeMans 4 dr. V 8	116	211.4	77.7	54.3	393
LeMans Safari V 8	116	213.3	77.7	55.0	4285
Grand Am V 8 4 door	116	212.6	77.7	54.3	4150
Firebird 6	108	192.1	73.4	50.4	3248
Firebird V 8	108	192.1	73.4	50.4	3469
Trans Am V 8	108	192.1	73.4	50.4	3711
Catalina V 8 2 door Hardtop	124	224.8	79.6	53.5	4326
Safari Wagon V 8	127	230.2	79.6	57.5	4904
Bonneville V 8 4 door Hardtop	124	224.8	79.6	53.7	4505
Grand Safari Wagon V 8	127	230.2	79.6	57.5	4906
Grand Vite V 8 4 dr. Hardtop	124	224.8	79.6	53.8	4512
Grand Prix V 8	116	216.6	78.7	52.9	4117

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
AMERICAN MOTORS — Gremlin 6	96	163	70.6	51.8	2572
Gremlin V8	96	161.3	70.6	51.6	2826
Horner 6	108	179.3	70.6	52.4	2475
Horner V8	108	179.3	70.6	52.5	2909
Matador 6	118	206.1	72.2	53.3	3242
Matador V8	118	206.1	72.2	55.1	3424
Ambassador V8	122	211	72.2	55.5	3606
Javelin 6	110	19.8	75.2	50.9	2924
Javelin V8	110	19.8	75.2	51.4	3186
BUICK — Skylark V8	114	208	76.5	54.2	3610
Skylark Custom V8	116	208.8	76.5	54.2	3551
Sportwagon V8	116	211.7	76.5	54.8	4082
GS V8	112	202.6	76.5	52.8	3526
LeSabre V8	124	227.9	79.7	54.4	4353
Estate Wagon V8	127	227.7	79.7	57.3	5175
Centurion V8	124	220.9	79.7	53.8	4560
Electra V8	127	226.9	79.7	54.9	4629
Wildcat V8	122	217.3	79.5	54.2	4497
CADILLAC — Colorado	137	229.9	79.8	54.6	4845
Escalade	126.3	222.7	79.8	53.9	4825
Escalade Special Brougham	126.3	229.9	79.8	55.5	5025
Escalade Seventy Five	131.5	248.4	79.8	57.8	5441
CHEVROLET — Camaro 6	109	186.0	74.4	49	3233
Camaro V8	108	186.7	74.4	49	3340
Chevy Nova 6	111.6	199.4	72.4	53.6	3265
Chevy Nova V8	111.6	199.4	72.4	53.9	3394
Chevelle 6	118.6	201.5	74.4	52.3	3377
Chevelle 2 dr	120	197.5	75.4	52.7	3229
Chevelle V8	118.6	201.5	75.4	53.3	3429
Chevelle Wagon V8	118.6	201.8	75.4	54.4	3965
Monte Carlo V8	116.0	206.5	75.6	52.9	3603
Chevrolet 6	112.5	219.7	79.5	54.1	3983
Chevrolet V8	112.5	219.9	79.5	54	4171
Chevrolet Wagon V8	126.0	235.2	79.5	57.1	4858
Corvette	95.0	182.5	69.0	47.8	3375
Yead 2300	97.0	189.7	65.4	51.9	2213
Yead 2300 Wagon	97.0	189.7	65.4	52.0	2388
CHRYSLER — Newport Royal	124	224.1	79.4	55.1	4215
New Yorker V8	124	224.9	79.4	55.5	4465
Town & Country V8	127	224.8	79.4	57.4	479
Imperial V8	127	229.5	79.6	56	5185
DODGE — Dart 6	111	199.2	69.6	54.5	294
Dart Demon	108	192.5	71.7	53.3	2635
Dart V8	111	196.2	69.6	54.0	3135
Challenger 6	110	191.3	76.3	51.9	3145
Challenger V8	110	191.3	76.3	50.9	3170
Coronet 4 dr 6	118	207.0	77.7	53.6	3470
Coronet 4 dr V8	115	205.4	76.9	52.1	3335
Coronet 2 dr 6	118	207.0	77.7	54.0	3411
Coronet Charger V8	118	213.4	78.7	56.4	3920
Coronet Wagon V8	122	219.4	79.6	55.0	3965
Monaco V8	122	222.2	79.6	55.0	4110
Monaco V8	122	222.8	79.2	57.1	4445
Monaco Wagon V8	122	225.6	79.2	57.1	4570

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
FORD — Pinto	94.2	163.0	69.4	50.1	2050
Pinto Wagon	94.2	172.7	69.7	52.0	2375
Maverick 2 dr 6	103	179.4	70.6	53.0	2653
Maverick 4 dr 6	104.9	186.3	70.6	53.1	2748
Mustang 6	109	184.5	74.1	50.8	3185
Mustang V8	109	189.5	74.1	50.8	3211
Mustang Mach I 351 V8	109	189.5	74.1	50	3206
Torino 4 dr 6	118	207.7	79.3	52.6	3234
Torino 2 dr 6	114	203.7	76.3	51.9	2636
Torino 4 dr V8	118	207.7	79.3	52.6	3234
Torino Wagon V8	118	211.5	79.0	54.0	4147
Ford Custom Granee 6	121	218.4	79.2	55.1	4028
Ford Custom V8	121	218.4	79.2	55.1	4168
Ford Galaxie LTD V8	121	218.4	79.2	54.1	4261
Ford Country Sedan V8	121	221.4	79.7	57.0	4540
Thunderbird V8	120.4	216.0	79.3	52.1	4582
LINCOLN CONTINENTAL V8	127	225.4	79.6	55.5	5116
Continental Mark IV V8	120.4	213.1	74.2	51.4	4956
MERCUURY — Comet 6	103	181.7	70.6	53	2666
Comet 4 dr 6	104.9	188.6	70.7	53.1	276
Comet 4 dr V8	104.9	188.6	70.7	53.1	276
Cougar V8	112.1	194.7	75	50.8	3476
Montego 6	118	212.1	78.6	52.6	373
Montego 2 dr 6	114	198.1	76.6	51.9	3662
Montego Wagon	118	215.4	79.6	55.0	4189
Montego V8	118	212.1	78.6	52.6	3793
Monterey V8	124	224.7	79.3	54.0	4253
Monterey Wagon V8	127	227.4	79.4	56.9	4675
Marquis V8	124	224.8	79.3	54.3	4598
Colony Park Wagon V8	121	220.5	80.0	56.9	4731
OLDSMOBILE — F85 Cutlass V8	129	227.6	76.8	53.5	3547
Cutlass Supreme (2 dr)	112.0	203.5	76.8	52.9	3459
Vista Cruiser V8	121.0	218.3	76.8	58.5	4272
Delta 88 Royale V8	124.7	222.5	79.5	55.8	4363
Custom Cruiser V8	127.0	226.7	79.5	57.7	5069
Ninety Eight	127.0	221.4	79.6	54.6	4576
Tempra	122.0	220.3	79.8	54.7	4672
PLYMOUTH — Valiant 6	108	186.4	70.7	52	2895
Valiant V8	112	192.4	70.7	54.3	2985
Valiant Scamp V8	111	191	71.7	52.7	2495
Barracuda 6	109	186.6	74.9	53.9	3105
Barracuda V8	108	185.4	74.9	53.9	3161
Cuda V8	109	184.6	74.9	57.7	3245
Satellite 6 2 dr	117	204.6	78.6	53.6	3350
Satellite V8 4 dr	117	204.6	78.6	54.0	3430
Satellite Wagon V8	117	210.9	79.2	56.4	3660
Road Runner V8	115	203	79.1	52.9	3111
Fury V8	120	217.2	79.9	55.0	3066
Fury Wagon	122	222	79.9	57.6	4485

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	curb Weight (lbs.)
PONTIAC—Ventura II 6	111	1194.5	72.4	53.9	3332
Ventura II V 8	111	1194.5	72.4	53.9	3192
LeMans 6	112	1203.2	76.7	52.0	3302
LeMans 2 dr. 6	112	203.2	76.7	52.0	3329
LeMans 4 dr. V 8	116	207.2	76.7	52.6	3579
LeMans Wagon	116	211.3	76.7	54.2	3874
Fiero 6	108	191.6	73.4	50.4	3240
Fiero V 8	108	191.6	73.4	50.4	3490
Fiero TransAm V 8	108	191.6	73.4	50.4	3695
Corolla V 8	123.5	221.3	79.3	54.2	4309
Corolla Brougham V 8	123.5	221.3	79.3	54.3	4322
Safari Wagon V 8	122	227.2	79.3	54.2	4935
Bonneville V 8	126	225.3	79.3	54.4	4388
Grand Safari Wagon V 8	127	227.2	79.3	54.2	5008
Grand Ville V 8	126	225.3	79.3	54.2	4438
Grand Prix V 8	118	213.6	76.4	52.0	3962

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
AMERICAN MOTORS — Gremlin 6					
Hornet 6	108	179.3	70.6	52.4	2702
Hornet V 8	108	179.3	70.6	52.6	2997
Hornet SC 360 V 8	108	179.3	70.6	52.6	3105
Matador 6	118	206.1	77.2	55.3	3234
Matador V 8	118	206.1	77.2	55.3	3393
Ambassador 6	122	210.8	77.2	55.5	3384
Ambassador V 8	122	210.8	77.2	55.5	3589
Javelin 6	110	191.8	75.2	50.9	2935
Javelin V 8	110	191.8	75.2	51.0	3192
Javelin AMI V 8	110	191.8	75.2	51.0	3193
BUICK — Skylark 6					
Skylark Custom V 8	116	207.2	77.3	54.2	3712
Sportwagon V 8	116	212.7	77.3	54.8	4084
G. S. V 8	112	203.2	77.3	53.8	3580
LeSabre V 8	124	220.7	79.7	54.4	4252
Estate Wagon V 8	127	226.8	79.7	57.3	4935
Centurion V 8	124	220.7	79.7	53.8	4460
Electra 225 V 8	27	226.1	79.7	54.9	4581
Riviera V 8	122	217.4	79.9	54.0	4502
CADILLAC — Calais deVille					
Fleetwood Eldorado	126.3	221.6	79.8	53.9	4811
Fleetwood 60 Special Brougham	133.0	228.8	79.8	56.5	5051
Fleetwood Seventy Five	151.5	247.3	79.8	58.1	5603
CHEVROLET — Camaro 6					
Camaro V 8	108.0	188.0	74.4	49.1	3310
Chevy Nova 6	111.0	189.4	72.4	53.9	3060
Chevy Nova 8	111.0	189.4	72.4	53.9	3192
Chevelle 6	116.0	201.5	75.4	53.3	3328
Chevelle 6 2 dr	112.0	197.5	75.4	52.7	3264
Chevelle V 8	116.0	201.5	75.4	53.3	3436
Chevelle Wagon V 8	116.0	206.8	75.4	54.4	3840
Monte Carlo V 8	116.0	206.5	75.6	52.9	3585
Chevrolet 6	121.5	216.8	79.5	54.1	3658
Chevrolet V 8	121.5	216.8	79.5	54.1	4014
Chevrolet Wagon V 8	125.0	223.2	79.5	57.1	4646
Corvette	98.0	182.5	69.0	47.8	3292
Vega 2300	97.0	169.7	65.4	51.9	2202
Vega 2300 Wagon	97.0	169.7	65.4	52.0	2286
CHRYSLEER — Newport Royal V 8					
300 V 8	124	224.6	79.1	55.2	4125
New Yorker V 8	124	224.6	79.1	55.4	4455
Town & Country V 8	122	224.8	79.1	57.4	4655
Imperial	127	229.7	79.1	56.1	4960
DODGE — Dart 6					
Dart Demon 6	108	192.5	71.6	52.0	2900
Dart V 8	111	196.2	69.7	53.9	3070
Challenger 6	110	191.3	76.3	53.8	3145
Challenger V 8	110	191.3	76.3	50.9	3200
Challenger R/T V 8	110	191.3	76.3	51.2	3560
Coronet 6	118	207.0	77.7	53.8	3185
Coronet 6 (2 dr)	118	205.4	77.7	52.3	3285
Coronet Charger V 8	115	205.4	76.9	52.3	3400
Coronet Wagon V 8	118	213.4	78.7	56.4	3900
Charger Super Bee V 8	115	205.4	76.9	52.7	3720
Charger R/T V 8	115	205.4	76.9	53.0	3790
Polara 6	122	220.2	79.2	55.0	3850
Polara V 8	122	220.2	79.2	54.9	3925
Monaco V 8	122	220.2	79.2	54.9	4145
Polara Wagon V 8	122	223.5	79.2	57.1	4600

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
FORD — Pinto 4					
Maverick 2 dr 6	103.0	179.4	70.6	52.6	2624
Maverick 4 dr 6	109.9	186.3	70.7	53.0	2719
Mustang 6	109.0	189.5	74.1	50.8	2183
Mustang V 8	109.0	189.5	74.1	50.8	2188
Mustang Boss 351 V 8	109.0	189.5	74.1	50.1	3173
Torino 6	117.0	206.2	76.5	53.1	3380
Torino V 8	117.0	206.2	76.5	53.1	3380
Torino 500 Wagon V 8	114.0	209.0	75.4	56.1	3787
Torino Cobra V 8	117.0	206.2	76.8	51.1	3684
Ford Custom Galaxie 6	121.0	216.2	79.2	54.9	3890
Ford Custom V 8	121.0	216.2	79.2	54.9	3880
Ford Galaxie LTD V 8	121.0	216.2	79.2	53.6	4104
Ford Country Sedan V 8	121.0	219.2	79.2	57.0	4426
Thunderbird 2 dr V 8	114.7	212.5	78.0	57.9	4542
Thunderbird 4 dr V 8	117.2	215.0	77.4	53.7	4687
LINCOLN CONTINENTAL					
Continental Mark III	127.0	225.0	79.6	55.5	5062
MERCURY — Comet 6					
Comet 4 dr 6	109.9	188.6	70.7	53.1	2721
Comet 4 dr V 8	109.9	188.6	70.7	53.0	2892
Montego 6	117	209.9	77.4	53.6	3285
Montego Wagon	114	211.8	75.4	56.1	3710
Montego V 8	117	209.9	77.4	53.6	3380
Cyclone V 8	117	209.9	77.4	52.5	3646
Cougar V 8	112.1	196.7	75.1	50.8	3429
Monterey V 8	124.0	224.7	79.3	54.0	4181
Monterey Wagon	121.0	220.4	79.4	56.9	4534
Marquis V 8	124.0	224.7	79.3	54.3	4487
Colony Park Wagon	121.0	220.4	79.4	56.9	4645
OLDSMOBILE — F 85 Cutlass 6					
F 85 Cutlass V 8	116.0	207.6	76.8	53.5	3330
Cutlass Supreme	116.0	207.6	76.8	53.5	3645
4-2 V 8	112.0	203.6	76.8	52.9	3792
Vista Cruiser	121.0	218.3	76.8	58.5	4285
Delta 88 V 8	124.0	220.2	79.5	53.6	4253
Delta 88 Custom Royale V 8	124.0	220.2	79.5	53.4	4319
Custom Cruiser	127.0	225.3	79.5	57.2	5006
Ninety Eight V 8	127.0	226.1	79.0	54.6	4620
Toronado V 8	122.3	219.9	79.8	54.7	4670
PLYMOUTH — Valiant 6					
Valiant V 8	108	188.4	71.1	54.0	2920
Valiant Scamp 6	111	192.1	69.7	52.6	2930
Barracuda 6	108	186.6	74.9	50.8	3010
Barracuda V 8	108	186.6	74.9	50.8	3160
Cuda V 8	108	186.6	74.9	51.2	3510
Satellite 6	117	204.6	79.1	53.5	3355
Satellite 6 (2 dr)	113	203.2	79.1	52.0	3325
Satellite V 8	117	204.6	79.1	53.8	3435
Satellite Wagon V 8	117	210.9	79.2	56.4	3880
Road Runner V 8	115	203.2	79.1	52.7	3680
Satellite GTX V 8	115	203.2	79.1	53.0	3760
Fury 6	120	215.1	79.6	55.0	3825
Fury V 8	120	215.1	79.6	55.0	3900
Fury Wagon	122	220.2	79.6	57.1	4410

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
PONTIAC—Ventura II 6	111	194.5	72.4	53.9	3032
Ventura II V 8	111	194.5	72.4	53.9	3165
LeMans 6	116	206.8	76.7	52.6	3323
LeMans 2 dr 6	112	202.8	76.7	52.0	3293
LeMans 2 dr V 8	112	202.8	76.7	52.0	3579
LeMans 4 dr V 8	116	206.8	76.7	52.6	3549
LeMans Wagon	116	210.9	76.7	54.5	3861
GTO V 8	112	203.3	76.7	52.3	3723
Firebird 6	108	191.6	73.4	50.4	3250
Firebird V 8	108	191.6	73.4	50.4	3506
Firebird Trans AM V 8	108	191.6	73.4	50.4	3664
Catalina V 8	123.5	220.2	79.5	54.3	4168
Catalina Brougham	123.5	220.2	79.5	54.3	4233
Bonneville	126	224.2	79.5	53.7	4473
Safari Wagon	127	226.2	79.5	54.2	4800
Grand Safari Wagon	127	226.2	79.5	54.2	4970
Grand Ville	126	224.2	79.5	53.6	4413
Grand Prix	118	213.7	76.4	52.0	3975

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Empty Weight (lbs.)
AMERICAN MOTORS—Gremlin 6					
Hornet 6	108	179.3	70.6	52.7	2814
Hornet V 8	108	179.3	70.6	52.7	3031
Rebel 6	114	199.0	77.2	55.0	3210
Rebel V 8	114	199.0	77.2	55.0	3371
Ambassador 6	122	208.0	77.2	55.2	3409
Ambassador V 8	122	208.0	77.2	55.2	3604
Javelin 6	109	191.0	71.9	51.5	2911
Javelin V 8	109	191.0	71.9	51.5	3178
AMC V 8	97	179.0	71.6	51.4	3192
BUICK Skylark 6					
Skylark Custom V 8	116	206.2	77.3	54.0	3341
Skylark Custom V 8	116	206.2	77.3	54.0	3676
Sportwagon V 8	116	212.6	77.3	57.0	4054
GS V 8	112	202.2	77.3	53.1	3560
GS 455 V 8	112	202.0	77.3	53.0	3769
LeSabre V 8	124	220.2	80.0	55.4	4169
LeSabre 454 V 8	124	220.2	80.0	55.4	4310
Wildcat Wagon V 8	124	223.3	80.0	57.1	4532
Wildcat Custom V 8	124	220.2	80.0	54.4	4357
Electra 225 V 8	127	225.8	80.0	55.9	4517
Electra V 8	110	215.5	79.3	53.6	4342
CADILLAC—Catalina De Ville					
Fleetwood Eldorado	120.0	221.0	79.9	53.7	4728
Fleetwood 60 Special	133.0	228.5	79.8	56.6	4933
Fleetwood 75 Limousine	149.8	245.5	79.8	58.1	5778
CHEVROLET—Comaro 6					
Comaro V 8	108.0	188.0	74.4	50.5	3166
Comaro V 8	108.0	188.0	74.4	50.5	3276
Chery Nova 4	111.0	189.4	72.4	53.8	2937
Chery Nova 6	111.0	189.4	72.4	53.8	3037
Chery Nova 8	111.0	189.4	72.4	53.8	3166
Chevelle 6	116.0	201.2	75.4	53.2	3327
Chevelle 6 7 dr	112.0	197.2	75.4	52.6	3303
Chevelle V 8	116.0	201.2	75.4	53.2	3434
Chevelle Wagon V 8	116.0	206.5	75.4	55.1	3872
Monte Carlo V 8 2 dr	116.0	205.8	75.6	52.6	3563
Chevrolet 6	119.0	216.0	79.8	56.0	3729
Chevrolet V 8	119.0	216.0	79.8	56.0	3888
Chevrolet Wagon V 8	119.0	216.7	79.8	57.1	4333
Corvair	98.0	182.5	69.0	47.4	3285
CHRYSLER—Newport V 8					
300	124	224.7	79.1	55.9	4265
New Yorker	124	224.7	79.1	55.9	4590
Town & Country	122	224.8	79.1	55.3	4740
DODGE—Dart 6					
Dart V 8	111	196.2	69.7	54.0	3015
Dart V 8	111	196.2	69.7	54.0	3094
Dart Swinger 340 V 8	111	196.2	69.7	54.0	3285
Coronet 6	117	209.2	76.7	54.7	3270
Coronet Wagon V 8	117	211.7	76.7	56.4	3794
Coronet V 8	117	209.2	76.7	54.7	3371
Coronet Super Brg V 8	117	209.2	76.7	53.0	3575
Coronet R T V 8	117	209.2	76.7	53.0	3635
Challenger 6	110	191.3	76.1	50.9	3114
Challenger V 8	110	191.3	76.1	50.9	3185
Challenger R T V 8	110	191.3	76.1	50.9	3550
Charger 6	117	208	76.6	53.0	3345
Charger V 8	117	208	76.6	53.0	3445
Charger R T 500 V 8	117	208	76.6	53.0	3770
Plaza Custom V 8	122	219.9	79.7	55.7	3991
Plaza V 8	122	219.9	79.7	55.7	4140
Plaza Wagon V 8	122	222.6	79.7	58.3	4447
FORD—Mustang 6					
Falcon 6	117.0	206.2	76.4	52.2	3242
Falcon V 8	117.0	206.2	76.4	53.0	3748
Falcon Wagon	114.0	209.0	75.4	55.9	3635
Mustang 6	108.0	187.4	71.7	51.5	2875
Mustang V 8	108.0	187.4	71.7	51.5	3098

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Empty Weight (lbs.)
Mustang Mach 1	108.0	187.4	71.7	51.6	2915
Mustang Boss 302	108.0	187.4	71.7	51.6	3122
Mustang Boss 429	108.0	187.4	71.7	51.6	3508
Torino 6	117.0	206.2	76.7	52.2	3315
Torino V 8	117.0	206.2	76.7	53.0	3371
Torino 500 Wagon	114.0	209.0	75.4	54.9	3695
Torino Cobra	117.0	206.2	76.8	51.7	3915
Fairlane 500 6	117.0	206.2	76.7	52.2	3711
Fairlane 500 V 8	117.0	206.2	76.7	53.1	3258
Fairlane 500 Wagon	114.0	209.0	75.4	55.9	3851
Ford Custom Galaxie 6	121	213.9	79.8	54.9	3738
Ford Custom V 8	121	213.9	79.8	54.9	3738
Ford Custom Wagon	121	216.9	79.8	56.8	4136
Ford Galaxie 500 V 8	121	213.9	79.8	54.6	3822
Ford LTD V 8	121	216	79.8	53.6	3847
Ford LTD V 8	121	216	79.8	54.9	3791
Thunderbird V 8	114.7	212.5	78	54.4	4484
Thunderbird 4 Door V 8	117.2	215	77.4	54.4	4653
IMPERIAL—Crown	127	229.7	79.1	55.7	4911
LINCOLN CONTINENTAL					
Continental Mark III	127.0	225.0	79.6	55.7	4911
Continental Mark III	127.0	225.0	79.6	55.7	4911
MERCURY—Montego 6					
Montego Wagon	114.0	211.8	75.4	55.7	3744
Montego V 8	117.0	209.9	77.3	53.1	3414
Cyclone V 8	117.0	209.9	77.3	54.1	3614
Cougar V 8	111.1	196.1	74.1	51.5	2940
Monterey V 8	124.0	221.8	79.8	54.1	4131
Monterey Wagon	121.0	220.5	79.8	56.8	4431
Marauder V 8	121.0	219.1	79.7	52.6	4319
Marauder V 8	124.0	224.3	79.8	54.1	4312
OLDSMOBILE—F 85 Cutlass 6					
F 85 Cutlass V 8	116	207.2	76.8	53.5	3611
F 42 V 8	112	203.2	76.2	52.8	3171
Delta Cruiser V 8	121	218.2	77.2	58.6	4182
Delta 88 V 8	124	219.1	79.9	55.5	4078
Delta 88 Custom Royale V 8	124	219.1	79.9	55.5	4174
Ninety Eight V 8	127	225.2	80.0	55.8	4157
Toronado V 8	119	214.3	78.8	52.8	4494
PLYMOUTH—Valiant 6					
Valiant V 8	108	188.4	71.1	54.0	3115
Valiant V 8	108	188.4	71.1	54.1	3225
Barracuda 6	108	186.7	74.9	53.8	3120
Barracuda V 8	108	186.7	74.9	53.9	3167
Barracuda 6	116	204	76.4	54.8	3240
Barracuda Wagon	117	209.1	76.4	56.4	3770
Barracuda V 8	116	204	76.4	54.8	3340
Barracuda Road Runner V 8	116	204	76.4	53.3	3640
Sport Satellite Wagon V 8	117	209.1	76.4	56.4	3910
Barracuda GTX V 8	116	204	76.4	53.3	3640
Fury 6	120	214.9	79.6	53.8	3740
Fury V 8	120	214.9	79.6	53.1	3845
Fury Wagon	120	220.6	79.6	56.3	4450
PONTIAC—Tempest 6					
Tempest V 8	116	206.5	76.7	52.6	3396
Tempest V 8	116	206.5	76.7	52.6	3672
LeMans Sports Safari	116	210.6	76.7	54.5	4038
GTO V 8	112	201.9	74.7	51.3	3281
Catalina V 8	122	217.9	79.8	54.8	4167
Catalina Wagon	122	220.9	79.8	56.1	4448
Executive V 8	125	223.9	79.8	55.0	4206
Bonneville V 8	125	224.6	79.8	55.0	4358
Grand Prix V 8	118	210.2	75.7	52.0	3936
Firebird 6	108.0	191.6	73.4	50.4	2741
Firebird Spirit V 8	108.0	191.6	73.4	50.4	3324

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Over all Length (in.)	Overall Width (in.)	Over all Height (in.)	Curb Weight (lbs.)
AMERICAN MOTORS—American 6*					
American V 8*	106	181	70.84	54.4	2714
Rebel 6*	114	197	71.24	54.4	2743
Rebel V 8*	114	197	71.24	54.4	3358
Ambassador 6	118	205	71.24	54.42	
Ambassador V 8*	118	205	71.24	54.42	3152
Javelin 6*	106	189	71.87	51.8	2892
Javelin V 8*	106	189	71.87	51.8	3114
AME V 8	97	177	71.57	51.2	3143
BULK—Special Drive 6*					
Skull Custom V 8*	116	204.7	75.6	54.2	419
CSL V 8	116	204.7	75.6	54.2	314
US 476 V 8	112	202.7	74.6	53	36
LeSabre V 8*	123	215	87.7	55.4	418
Wildcat V 8	126	225.5	86.0	55.3	415
El Toro 225 V 8	126	224.9	86.0	55.1	415
El Toro V 8	126	225.2	78.1	51.1	414
CADILLAC—Corair de Ville					
Fleetwood Eldorado	121	221.0	80.0	53.3	417
Fleetwood 67 Special	121	221.2	79.9	56.1	414
Fleetwood 75 Limousine	149.8	245.0	79.9	51	513
CHEVROLET—Corvair 500 6*					
Chevy II 4	111	189.4	72.4	55.3	2891
Chevy 6*	111.0	189.4	72.4	51.7	2740
Chevy II V 8*	110	189.4	72.4	55.3	3145
Chevrolet 6*	116.7	201.1	75.7	53.3	2745
Chevelle V 8*	116.7	201.1	75.7	53.3	3115
Chevelle 6	119.0	214.7	79.6	55.9	3575
Chevrolet V 8*	119.0	214.7	79.6	55.8	3775
Camaro 6*	78	144.6	72.3	40.9	2910
Camaro V 8*	78	144.6	72.3	50.9	3114
Camaro V 8*	95.0	182.1	69.2	47.8	3117
CHRYSLER—Newport*					
300*	114	219.2	78.6	51.6	4175
New York*	114	221.7	78.7	55.6	4445
New York*	114	219.2	78.6	51.7	4114
DODGE—Polio 6*					
Polio V 8*	111	195.4	69.7	51.1	2715
Coronet Deluxe 440 6	117	206.6	76.7	54.7	3190
Coronet Deluxe V 8*	117	206.6	76.7	54.7	3110
Coronet 440 & 500 V 8*	117	206.6	76.7	54.7	3140
Charger 6	117	208	76.6	51.7	3115
Charger V 8	117	208	76.6	51.7	3115
Polaris P. 500 V 8*	122	219	80	56.3	3710
Monaco Monaco 500 V 8*	122	219	80	51.3	4110

Make and Model	Wheelbase (in.)	Over all Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
FORD—Falcon 6*					
Falcon V 8	111	184.3	73.3	55	2830
Fairlane 6	116	201.1	74.5	55	3273
Fairlane V 8*	116	201.1	74.5	55	3441
Ford 6	119.0	213.3	78.0	51.8	3443
Ford V 8*	119.0	213.3	77.0	55.8	3701
Mustang 6	108.0	183.6	70.9	51.6	2758
Mustang V 8*	108.0	183.6	70.9	51.7	2964
Thunderbird V 8	114.7	216.9	77.3	52.4	4563
IMPERIAL					
Imperial	117.0	224.5	79.6	51.0	4210
INFINITI CONTINENTAL					
Continental Mark III	117.2	216.1	79.4	52.9	4738
Montego 6	116	194	76	55	3220
Montego V 8*	116	194	76	55	3115
Mercury V 8*	123	220.1	77.9	56	3985
Lincoln V 8*	111	190.3	71.3	51.8	3270
OLDSMOBILE—F 85 6					
F 85 V 8*	116	205.6	76.8	51.5	3261
Delmont 88 V 8*	123	217.6	80.0	51	4063
Delta 88 Delta Custom V 8*	123	217.8	80.0	53.5	4163
Ninety Eight V 8*	126	223.7	81	51.8	4385
Toronado V 8*	114	198.8	71.8	51.8	4445
PLYMOUTH—Valiant 6*					
Valiant V 8*	108	188.4	71.0	54.0	3000
Barracuda 6	108	192.8	71.6	52.8	2995
Barracuda V 8*	108	192.8	71.6	52.8	3160
Satellite 6	116	202.7	76.4	54.7	3161
Satellite V 8*	116	202.7	76.4	54.7	3315
Fury 6	119	213	77.7	55.8	3631
Fury V 8*	119	213	77	51.7	3114
PONTIAC—Tempest 6*					
Tempest V 8*	116	204.7	74.8	52.5	3266
GTO V 8*	116	204.7	74.8	52.2	3193
Catalina V 8*	121	216.5	79.8	54.8	4024
Executive V 8*	124	221.5	79.6	54.8	4154
Bonneville V 8*	124	221.5	79.8	53.8	4309
Grand Prix V 8*	121	216.3	79.8	53.0	4294
Firebird 6*	108.1	184.8	72.6	50.0	3093
Firebird V 8*	108.1	184.8	72.6	50.0	3261

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Cur. Weight (lbs.)
AMERICAN MOTORS—American 6*	106	181	70.84	54.49	2599
American V 8*	106	181	70.84	54.49	2532
Rebel 6*	114	197	78.36	54.61	3166
Rebel V 8*	114	197	78.36	54.61	3354
Ambassador 6*	118	202.5	78.36	54.59	3264
Ambassador V 8*	118	202.5	78.36	54.69	3387
Mustang 6	118	201.45	78.36	53.6	3262
Mustang V 8	118	201.45	78.36	53.7	3410
Buick Wildcat V 6	114	205	75.4	54.1	3100
Buick Wildcat V 8*	115	205	75.4	54	3490
GS 44 V 8	115	205.0	75.4	54.1	3444
GS 454 V 8	115	205	75.4	54	3490
LeSabre V 8	120	217.5	80	55.6	4000
Wildcat V 8	120	220.5	81.0	55.6	4178
Electra 225 V 8	120	223.9	80.0	56.2	4424
Regal V 8	110.7	211.7	79.4	53.2	4342
CADILLAC—Cougar de Ville	125.5	224.0	80.0	55.6	4718
Seville Eldorado	120.0	221.0	80.0	53.3	4688
Seville de Ville Special	131.0	227.5	80.0	56.7	4874
DeVille Limousine	149.8	244.5	87.0	67.4	4547
CHEVROLET—Corvair 6*	114.0	183.3	69.7	51.4	2113
Corvair II 100 4	114.0	183.3	71.3	53.0	2671
Corvair II 6*	114.0	183.3	71.3	53.3	2770
Corvair II V 8*	110.0	183.0	71.3	53.3	2910
Chevelle 6*	115.0	197.0	75.0	53.0	3105
Chevelle V 8*	115.0	197.0	75.0	53.7	3240
Corvair 6	119.0	193.2	79.9	55.4	3520
Corvair V 8*	119.0	203.2	79.9	55.4	3710
Impala 6*	118.0	184.7	72.5	51.4	2910
Impala V 8*	108.0	184.7	72.5	51.4	2910
Corvair V 8	118	195.1	69.6	49.4	2910
CHRYSLER—Newport*	124	219.5	78.7	56.4	4155
300*	124.0	223.4	78.7	56.1	4310
New Yorker*	124.0	219.3	78.7	56.8	4285
DODGE—Dart 6*	111	195.4	69.7	53.5	2844
Dart V 8*	111	195.4	69.7	53.8	2930
Coronet 6	117	203.0	75.3	54.9	3192
Coronet V 8*	117	203.0	75.3	54.9	3260
Polaris Monaco V 8*	122	219.6	80.0	56.4	4010
Monaco SOG*	122	219.6	80.0	54.6	4155
Charger V 8	117	203.6	75.3	54.5	3110

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Cur. Weight (lbs.)
FORD—Falcon 6*	110	184.3	71.1	54.6	2710
Falcon V 8*	110	184.3	71.1	54.6	2914
Fairlane 6	116.0	190.0	74.7	54.0	2915
Fairlane V 8	116.0	197.0	74.7	54.0	3111
Ford 6	119.0	197.0	74.7	54.0	3111
Ford V 8*	119.0	197.0	74.7	54.0	3111
Mustang 6	118	183.6	71.1	54.6	2710
Mustang V 8	118	183.6	71.1	54.6	2710
Thunderbird V 8	115	194	71.1	54.6	2710
IMPERIA	114	194	71.1	54	2710
INDEPENDENT—Lia	114	194	71.1	54	2710
Mercury Intermediate 6	116	194	71.1	54	2710
Intermediate V 8*	116	194	71.1	54	2710
Mercury V 8*	121	218.2	76.7	56	3435
Cougar V 8	121	218.2	76.7	56	3435
OLDSMOBILE—F 85 6	115.0	204	74.0	54.4	3151
F 85 V 8*	115.0	204.2	74.0	54.4	3275
Delmont 88 V 8	122.0	217.0	80	55.1	4148
Delmont 88 Cutler 88 V 8*	122.0	217.0	80	55.1	4148
Ninety Eight V 8	126.0	223.0	80	55.8	4410
Toronado V 8	119.0	211	80	52.8	4424
PLYMOUTH—Valiant 6	108.0	188.4	71	52.6	2713
Valiant V 8*	108.0	188.4	71	54.7	2923
Barracuda 6	108.0	192.8	71.6	53.5	2810
Barracuda V 8*	108.0	192.8	71.6	53.5	3010
Belvedere 6	116.0	205.5	76.4	55.0	3145
Belvedere V 8*	116.0	205.5	76.4	55.0	3310
Fury 6	119.0	213	77.7	56.1	3470
Fury V 8*	119.0	213	77.7	56.1	3470
PONTIAC—Tempest 6	115	196	74.4	53	2722
Tempest V 8*	115	196	74.4	55	2910
GTO V 8	115	204.6	74.7	57	3513
Catalina V 8*	121	215.6	79.7	55.3	4174
Executive V 8*	124	222.6	79.7	55.6	4154
Bonneville V 8*	124	222.6	79.4	54.6	4115
Grand Prix V 8*	127	215.4	79.4	54.7	4114
Firebird 6*	108	188.6	71.1	51	2793
Firebird V 8	108	188.6	71.1	51	2793

Passenger Car Specifications

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
Buick—Special Skylark V 6	115	204	75.5	55.9	3197
Special Skylark V 8	115	204	75.5	55.9	3342
Wildcat	123	216.9	80	57.1	4077
Wildcat	126	219.9	80	57.0	4140
Wildcat 225	126	223.4	80	57.5	4519
Wildcat	119	211.2	79.3	54.4	4166
CADILLAC—Cala de Ville	129.5	224.0	79.9	55.6	4716
Fleetwood Special Sedan	133.0	227.5	79.9	56.7	4861
Fleetwood 75 Limousine	149.8	244.5	79.9	57.4	5459
CHEVROLET—Corsair 6	108	183.3	69.7	51.2	2535
Chevy II 100 4	110.0	183	71.3	55.1	2640
Chevy II 6	110.0	183	71.3	55.1	2745
Chevy II 8	110.0	183	71.3	55.1	2915
Chevy 6	115.0	197.0	75.0	53.0	3080
Chevy 8	115.0	197.0	75.0	53.0	3235
Chevrolet 6	119.0	213.2	79.6	55.4	3520
Chevrolet V 8	119.0	213.2	79.6	55.4	3677
Corvette	98.0	175.1	69.2	49.6	3140
CHRYSLER—Newport	124.0	219.0	79.5	55.5	4185
Two	124.0	221.9	79.5	55.2	4750
New York	124.0	229.0	79.5	55.7	4385
AMERICAN—Crown LeBaron	129.0	227.8	80.0	55.8	5700
DODGE—Dart 6	111	196.3	70.8	52.7	2830
Dart 8	111	196.3	70.8	53.1	3037
Coronet 6	117	203.0	75.3	53.7	3114
Coronet 8	117	203.0	75.3	54.0	3385
Polar Monaco	121	213.3	80.0	55.4	4057
Monaco 500	121	213.3	80.0	54.1	4185
Charger 8	117	203.6	75.3	53.1	3755
FORD—Falcon 6	111.0	184.3	73.2	54.6	2677
Falcon V 8	111.0	184.3	73.2	54.6	2903
Fairlane 6	116.0	197.0	74.4	55.0	3108
Fairlane V 8	116.0	197.0	74.4	55.0	3108
Ford 6	119.0	210.0	79.0	55.6	3581
Ford V 8	119.0	210.0	79.0	55.6	3716
Mustang 6	108.0	181.6	68.2	51.6	2606
Mustang V 8	108.0	181.6	68.2	51.6	2851
Thunderbird 8	113	205.4	73.3	52.5	4566

Make and Model	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
LINCOLN CONTINENTAL	126	221.9	79.7	57.9	5295
MERCURY—Comet 6	116	203.0	73.8	55	2964
Comet V 8	116	203.0	73.8	55	3113
Mercury V 8	123	220.4	79.6	56	4174
OLDSMOBILE—F 85 6	115.0	214.2	75.4	54.5	3146
F 85 V 8	115.0	204.2	75.4	54.5	3369
Jetstar 88	123.0	217.0	81.0	57.5	3965
Dynamic 88 Delta 88	123.0	217.0	81.0	55.5	4
Ninety Eight	126.0	223.0	80.0	55.4	4368
Starfire	123.0	217.0	80.0	54.1	4204
Toronado	119.0	211.0	78.5	52.8	4495
PLYMOUTH—Valiant 6	106.0	188.3	70.2	53.1	2747
Valiant V 8	106.0	188.3	70.2	53.4	2820
Barracuda 6	106.0	188.3	70.2	53.0	2610
Barracuda V 8	106.0	188.3	70.2	53.3	2950
Belvedere 6	116.0	200.5	75.5	53.7	3205
Belvedere V 8	116.0	200.5	75.5	54.7	3380
Fury 6	119.0	209.8	78.7	54.9	3650
Fury V 8	119.0	209.8	78.7	55.3	3840
PONTIAC—Tempest 6	115	206.4	74.4	54.4	3234
Tempest V 8	115	206.4	74.4	54.4	3429
GTO	115	206.4	74.4	54.2	3618
Catalina	121	214.8	79.7	55.3	3988
Star Chief	124	221.8	79.7	55.3	4111
Bonneville	124	221.8	79.7	54.3	4273
Grand Prix	121	214.8	79.7	53.9	4118
RAMBLER—American 6	112	195	69.5	54.5	2658
Classic 6	112	195	74.5	54.3	2954
Classic V 8	112	195	74.5	54.3	3265
Ambassador 6	116	200	74.5	55.0	3102
Ambassador V 8	116	200	74.5	55.0	3356
Marlin 6	112	195	74.5	54.2	3149
Marlin V 8	112	195	74.5	54.2	3430
STUDE—Comm Daytona Cruiser 6	113	194	71.5	54.8	3021
Comm Daytona Cruiser V 8	113	194	71.5	54.8	3232

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
ALFA ROMEO Spider Veloce	88.6	161.1	64.4	50.8	2,455
Spider Veloce	94.5	171	65.4	52.4	2,710
Sports Sedan	96.8	172.4	63.7	56.3	2,690
ARROW 160 Coupe	92.1	167.3	63.4	52.2	2,150
200 Coupe	92.1	167.3	63.4	52.2	2,304
ASTON MARTIN V 8 Coupe	102.8	183.8	72	52.3	3,800
Lagonda Sedan	114.8	208	71.5	51.3	3,800
AUDI Fox	97.2	173.8	64.8	53.6	2,070
100 LS Sedan	105.3	178.9	69.1	54.6	2,568
BMW 320 Sedan	100.9	177.5	63.4	54.3	2,650
530 Sedan	107.8	190	67.2	55.9	3,440
630 CS Coupe	103.4	182.7	67.9	53.7	3,360
CAPRI II 2300 Coupe	100.9	174.8	66.9	51	2,590
2600 Coupe	100.9	174.8	66.9	51	2,720
COLT Coupe/Sedan	92.1	162.6	60.4	53.5	2,024
Hardtop	95.3	171.1	63.6	54.4	2,280
Wagon	95.3	172.7	62.8	55.7	2,380
COURIER Pickup	106.9	177.9	63	61.5	2,508
Pickup (Long wheel)	112.6	189.4	63	61.5	2,584
DATSUN F 10 Coupe	94.3	156.9	59.8	51.8	1,970
F 10 Wagon	94.3	157.3	59.8	53.7	1,960
B 210 Sedan	92.1	163	60.8	53.5	1,975
B 210 Hatchback	92.1	162.2	60.8	53	2,020
710 Hardtop	96.5	171.1	62.2	54.5	2,396
710 Sedan	96.5	171.1	62.2	55.3	2,377
710 Wagon	96.5	173.2	62.2	56.1	2,509
810 Sedan	104.3	181.5	64.2	54.5	2,659
810 Wagon	104.3	185.6	64.2	56.1	2,690
200 Sx	97	170	63	57.2	2,365
280 2	90.7	173.4	64.2	51	2,697
280 2 2+2	102.6	185.6	65	51.4	2,841
620 Pickup	100.2	169.3	62.6	60.8	2,395
620 Pickup (Long wheel)	100	184.7	62.6	60.8	2,460
620 Pickup (King Cab)	110	178.7	62.6	60.8	2,495
FERRARI Dino 308 GT4	100.4	176.7	71	47.6	3,200
308 GTB Coupe	92.1	172.4	67.7	44.1	3,110
FIAT X 9	86.7	155.5	61.8	46.1	2,035
124 Spider	89.7	163	63.5	49.2	2,250
128 3P Coupe	87.5	156.4	61.4	51.2	1,995
128 Sedan	96.4	158.6	62.6	55.9	1,950
128 Wagon	96.4	159.2	62.6	55.9	2,045
131 Sedan	98	172.4	64.6	53.5	2,455
131 Wagon	98	172.4	64.6	55.1	2,505
HONDA Civic Sedan	86.6	147.8	59.2	52.2	1,665
Civic CVCC Sedan	86.6	150	59.3	52.4	1,762
Civic CVCC Wagon	89.8	159.4	59.3	54.3	1,985
Accord CVCC	93.7	162.8	63.8	52.4	2,019
JAGUAR XJ6C Coupe	108.8	196.5	69.8	54.1	4,060
XJ6C Sedan	112.8	200.5	69.8	54.1	4,088
XJ12L Sedan	112.8	200.5	69.8	54.1	4,300
XJ S Coupe	102	192.3	70.6	47.8	4,065

MAKE AND MODEL	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
LANCIA Beta Sedan	100	178	66.5	55.1	2,695
Beta Coupe	92.6	166.7	65	50.6	2,470
Beta HPE	100	178.5	65	50.6	2,589
Scorpion	90.6	156.1	66.8	46.9	2,370
LOTUS Esprit	96	169	73.3	43.8	1,980
Elite	97.8	179.7	71.5	47.5	2,160
Sprint	97.8	179.7	71.5	47.3	2,160
LUV	102.4	173.8	63	59.3	2,440
MAZDA GLC Hatchback	91.1	154.3	63.2	53.9	1,965
808 Coupe	91	166	63	53	2,015
808 Sedan	91	166	63	54	2,170
808 Wagon	91	168	63	55	2,295
RX 3 Coupe	91	168	63	53	2,360
RX 4 Sedan	99	179	65	56	2,765
RX 4 Wagon	99	183	65	56	2,910
Cosmo Coupe	99	182	66	52	2,820
MERCEDES-BENZ 230 Sedan	110	190.9	70.3	56.6	3,195
240 Diesel Sedan	110	190.9	70.3	56.6	3,210
300 Diesel Sedan	110	190.9	70.3	56.6	3,515
280-E Sedan	110	190.9	70.3	56.6	3,530
280 SE Sedan	112.8	205.5	73.6	56.1	3,905
450-SEL Sedan	116.7	209.4	73.6	56.3	4,060
450-SL Coupe	96.9	182.3	70.5	50.8	3,815
450-SLC Coupe	111	196.4	70.5	52.4	3,860
MG Midget	80	143	54	48.3	1,649
MG B	91.1	156.3	59.9	51	2,338
OPEL Coupe	94.3	168	61.8	50.6	2,139
Sedan	94.3	170.5	61.8	51.3	2,211
PEUGEOT 504 Sedan	108	182.4	66.7	57	2,890
504 Diesel Sedan	108	182.4	66.7	57	3,075
504 Wagon	114	194.4	66.7	61	3,160
504 Diesel Wagon	114	194.4	66.7	61	3,300
604 Sedan	110.2	192.3	66.7	56.3	3,416
PORSCHE 924 Coupe	94.5	170.1	66.3	50	2,447
911 S Coupe	89.5	168.9	63.4	52	2,458
Turbo Carrera	89.5	168.9	65.9	52	2,635
RENAULT 5 Sedan	95.8	141.5	60	50	1,819
12 Sedan	95	174	64.5	56.6	2,200
12 Wagon	96	176	64.5	57	2,319
17 Coupe	96	172	64	51.5	2,507
17 Gordini Coupe	96	172	64	51.5	2,507
ROLLS-ROYCE Silver Shadow	119.5	207.5	71.8	59.8	4,700
Silver Shadow (Long wheel)	123.5	211.5	71.8	59.8	4,850
Corniche Coupe	119	207.5	72.7	58.8	5,000
Corniche Convertible	119.5	207.5	72.7	59.8	5,000
Camargue	120.1	207.5	75.5	58.2	5,175
SAAB 99 Sedan	97.5	175	65.5	56.6	2,450
99 Hatchback	97.5	179	65.5	56	2,600

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
SUBARU GF Hatchback	96.7	164	59.3	53.1	2,045
DL Coupe	96.7	164	59.3	53	2,000
DL Sedan	96.7	164	59.3	54.5	1,980
DL Wagon	96.7	164.8	59.3	55.9	2,145
HWB Wagon	96.1	158.7	59.1	57.5	2,210
TOYOTA Corolla Sedan	93.3	164.6	61.8	54.5	2,015
Corolla Hardtop	93.3	165.2	65	53.5	2,300
Corolla Wagon	93.3	167.7	62.4	54.7	2,270
Corolla Sport Coupe	93.3	166.3	63.6	52	2,300
Corolla Liftback	93.3	170	63.6	52	2,250
Corona Sedan	98.4	173.2	63.8	55.1	2,620
Corona Hardtop	98.4	173.2	63.8	54.1	2,710
Corona Wagon	98.4	176.4	63.8	56.3	2,770
Celica Hardtop	96.3	174.6	63.8	52	2,530
Celica Liftback	99.3	174.4	63.8	51	2,610
Pickup	101.6	168.7	62.2	61.8	2,430
Long bed Pickup	110	184.6	62.2	61.8	2,500
TRIUMPH Spitfire	83	156.3	58.5	45.6	1,830
TR 7	85	164.5	66.2	49.9	2,478
TVR Coupe	90	164	64	47	2,150
VOLKSWAGEN Beetle Sedan	94.5	163.4	61	59.1	1,970
Beetle Convertible	95.3	164.8	62.4	59.1	2,110
Rabbit	94.5	155.3	63.4	55.5	1,860
Rabbit Diesel	94.5	155.3	63.4	55.5	1,960
Scirocco	94.5	155.7	64	51.5	2,015
Dasher	97.2	172.4	63	53.5	2,207
Bus	94.5	179	68.3	77	3,042
VOLVO 242 244 Sedan	104	192.6	67.2	56.2	2,933
245 Wagon	104	192.6	67.2	57.5	3,171
264 Sedan	104	192.6	67.2	56.2	3,174
265 Wagon	104	192.6	67.2	57.5	3,287

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
ALFA ROMEO 2000 Spider Veloce	88.6	161.1	64.4	50.8	2,455
Alfetta GT Coupe	94.5	171	65.5	52.5	2,310
Alfetta Sedan	98.8	172.4	63.7	56.3	2,689
ARROW 160 Coupe	92.1	167.3	63.4	52.5	2,156
200 Coupe	92.1	167.3	63.4	52.5	2,295
ASTON MARTIN V 8 Coupe	102.8	183.8	72	52.3	3,800
AUDI Fox	97.2	172.8	63	53.7	2,108
100 LS Sedan	105.3	187.9	69.1	54.6	2,610
BMW 2002 Sedan	98.4	176	62.6	55.5	2,460
530i Sedan	102.8	190	67.2	56	3,300
3.0 Si Sedan	106	195	68.9	57.1	3,420
CAPRI II 2300 Coupe	100.9	174.8	66.9	51	2,590
2800 Coupe	100.9	174.8	66.9	51	2,720
COLT Coupe	95.3	171.1	63.6	55.3	2,225
Hardtop	95.3	171.1	63.6	55.3	2,325
Sedan	95.3	171.1	63.6	55.3	2,425
Wagon	95.3	172.1	62.8	55.7	2,350
COURIER Pickup (1975)	104.3	172	63	61.6	2,555
DATSUN B 210 Coupe	92.1	162.2	60.8	53	2,095
B 210 Sedan	92.1	163	60.8	53.5	2,095
710 Hardtop	96.5	171.1	62.2	54.5	2,396
710 Sedan	96.5	171.1	62.2	55.3	2,399
710 Wagon	96.5	173.2	62.2	56.1	2,509
610 Hardtop	98.4	174	63	54.5	2,473
610 Sedan	98.4	174.2	63	55.3	2,480
610 Wagon	98.4	176.2	63	55.7	2,628
280 Z Coupe	90.7	173.2	64.2	51	2,692
280 Z 2 Coupe	102.6	185.4	65	51.4	2,852
620 Pickup	100.2	169.3	62.6	60.8	2,795
320 Pickup (Long Wheelbase)	100	184.7	62.6	60.8	2,460
FERRARI Dino Coupe	100.4	176.7	71	47.6	3,200
FIAT X 1/9 Convertible	86.7	158.5	61.8	46.1	2,050
124 Spider Convertible	89.7	163.1	63.5	49.2	2,250
128 3 P Coupe	87.5	156.4	61.4	51.2	1,995
128 Sedan	96.4	158.6	62.6	55.9	1,990
128 Wagon	96.4	159.2	62.6	55.9	2,045
131 Sedan	98	171.7	64.6	53.7	2,455
131 Wagon	98	171.7	64.6	53.3	2,505
HONDA Civic	86.6	147.8	59.3	52.2	1,683
Civic CVCC	86.6	150	59.3	52.2	1,758
Civic CVCC Wagon	89.8	159.5	59.3	54.1	1,980
JAGUAR XJ6C Coupe	106.8	196.5	69.8	54.1	4,024
XJ12C Coupe	108.8	196.5	69.8	54.1	4,270
XJ6L Sedan	112.8	200.5	69.8	54.1	4,068
XJ12L Sedan	112.8	200.5	69.8	54.1	4,314
XJ S Coupe	102	182.3	70.6	47.8	3,935
JENSEN GT Coupe	92	165.8	63.3	48.5	2,400
Healey Convertible	92	165.5	63.3	48.1	2,200
Interceptor	105	188	69	53	4,000

MAKE AND MODEL	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
LANCIA Beta Coupe	92.5	166.7	65	50.6	2,470
Beta Sedan	100	178	66.5	55.1	2,645
Beta HPE Wagon	100	178.5	65	50.6	2,519
Scorpion Coupe	90.6	158.1	66.8	46.9	2,370
LOTUS Elite	97.8	179.7	71.5	47.5	2,630
Sprint	97.8	179.7	71.5	47.3	N.A.
Esprit	96	169	73.3	43.8	N.A.
LUV Pickup	102.4	173.8	62.8	59.3	2,450
MASERATI Merak	102.3	170	69.6	44.6	3,260
Bora	102.3	177	69.6	44.6	3,500
Khamsin	100.5	180	71	47	3,350
MAZDA Mizer Coupe	91	166	63	53	2,035
Mizer Sedan	91	166	63	54	2,030
Mizer Wagon	91	168	63	55	2,205
808 Coupe	91	166	63	53	2,150
808 Sedan	91	166	63	54	2,130
808 Wagon	91	168	63	55	2,330
RX 3 Coupe	91	168	63	53	2,410
RX 3 Wagon	91	169	63	55	2,545
RX 4 Hardtop	99	179	66	54	2,730
RX 4 Sedan	99	179	65	56	2,730
RX 4 Wagon	99	183	65	56	2,930
Cosmo Coupe	99	182	66	52	2,845
B 1600 Pickup	104	172	63	62	2,515
Rotary Pickup	104	173	67	61	2,825
MERCEDES-BENZ 240-D Sedan	108.3	195.5	69.7	56.7	3,210
300 D Sedan	108.3	195.5	69.7	56.7	3,515
230 Sedan	108.3	195.5	69.7	56.7	3,135
280 Sedan	108.3	195.5	69.7	56.7	3,570
280 C Coupe	108.3	195.5	69.7	54.9	3,550
280 S Sedan	112.8	205.5	73.6	56.1	3,945
450 SE Sedan	112.8	205.5	73.6	56	4,135
450 SEL Sedan	116.7	209.4	73.6	56.3	4,115
450 SL Coupe	96.9	182.3	70.5	50.8	3,745
450 SLC Coupe	111	195.4	70.5	52.4	3,945
MG Midget	80	141	54	46.3	1,817
MG B Convertible	91	158.3	59.9	51	2,230
OPEL ISUZU Coupe	94.3	168	61.8	50.8	2,135
PEUGEOT 504 Sedan	108	182.4	66.7	57	2,830
504 Wagon	114	194.4	66.7	61	3,130
504 Diesel Sedan	108	182.4	66.7	57	3,030
504 Diesel Wagon	114	194.4	66.7	61	3,230
PORSCHE 912 E Coupe	89.4	168.9	63.4	50	2,558
911 S Coupe	89.4	168.9	63.4	50	2,558
Turbo Carrera	89.6	168.9	69.9	52	2,615
RENAULT 5 Sedan	95.8	141.5	60	55	1,819
12 Sedan	96	174	64.5	56.6	2,158
12 Wagon	96	176	64.5	57	2,294
15 TL Coupe	96	172	64	55.1	2,034
17 TL Convertible	96	172	64	51.5	2,472
17 Gordini Convertible	96	172	64	51.6	2,435

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
ROLLS ROYCE Silver Shadow	119.5	207.5	71.8	59.8	4,700
Silver Shadow (Long w.b.)	123.5	211.5	71.8	59.8	4,850
Corniche Coupe	119	207.5	72.7	58.8	5,000
Corniche Convertible	119.5	207.5	72.7	59.8	5,000
Camariou	120.1	207.5	75.5	58.2	5,175
SAAB 99 Sedan	97.5	175	66.5	56.5	2,560
99 Wagonback	97.5	179	66.5	56.5	2,630
SUBARU ST0 Sedan	96.7	164	59.3	54.5	1,985
GF Hardtop	96.7	164	59.3	53.1	2,105
DL Coupe	96.7	164	59.3	53	2,005
DL Sedan	96.7	164	59.3	54.5	2,085
DL Wagon	96.7	164.8	59.3	55.9	2,145
4WD Wagon	96.1	158.7	59.1	57.5	2,190
TOYOTA Corolla Hardtop	93.3	165.2	62.4	53.5	2,280
Corolla Sedan	93.3	165.2	61.8	54.5	2,270
Corolla Wagon	93.3	167.7	62.4	54.7	2,325
Corona Hardtop	98.4	173.2	63.8	54.1	2,610
Corona Sedan	98.4	173.2	63.8	55.1	2,576
Corona Wagon	98.4	176.4	63.8	56.3	2,645
Celica Hardtop	98.3	174.6	63.8	52	2,545
Celica GT Liftback	98.3	174.4	63.8	51	2,620
Mark II Sedan	101.7	182.1	64.4	55.1	2,839
Mark II Wagon	101.7	182.9	64.4	55.9	2,857
Pickup	101.6	166.9	61.2	62.2	2,455
Pickup (Long w.b.)	110	184.8	61.2	62.2	2,545
Land Cruiser Hardtop	90	152.4	65.6	76.8	3,790
Land Cruiser Wagon	106.3	164	68.3	73.4	4,299
TRIUMPH Spitfire Convertible	83	156.3	58.5	45.6	1,628
TR 6 Convertible	85	162.1	58	45.0	2,422
TR 7 Coupe	85	164.5	66.2	49.9	2,272
TVR Coupe	90	164	64	47	2,150
VOLKSWAGEN Beetle Sedan	94.5	163.4	61	59.1	1,970
Beetle Convertible	95.3	164.8	62.4	59.1	2,110
Rabbit	94.5	155.3	63.4	55.5	1,860
Sirocco	94.5	155.7	64	51.5	2,015
Dasher	97.2	172.8	63	53.5	2,262
Bus	94.5	179	69.3	77	3,042
VOLVO 242 2-door Sedan	104	192.6	67.1	56.5	2,901
244 4-door Sedan	104	192.6	67.1	56.5	2,938
245 Wagon	104	192.6	67.1	57.5	3,163
264 4-door Sedan	104	192.6	67.1	56.5	3,114
265 Wagon	104	192.6	67.1	57.5	3,265

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
ALFA ROMEO Alletta GT Coupe	194.5	165	65.5	52.5	2,310
Alletta 4 door Sedan	98.8	168	65.75	56.5	2,337
2000 Spider Veloce	88.5	166.2	64.1	48.8	2,320
2000 GT Veloce	92.5	161.1	62.2	50.4	2,305
2000 Berlina	110.1	176.7	61.6	53.8	2,590
AUDI 100LS	110.5	188	69.1	56	2,571
Fox	97.2	172	62.7	53.6	2,037
AUSTIN Marina 2 door GT (1974)	96	169	69	54.9	2,233
Marina 4 door (1974)	96	172	69	55.2	2,252
BMW 2002 Sedan	96.4	176	62.6	55.5	3,300
530 Sedan	103.8	189.9	67.2	55.9	4,340
700 S Sedan	106	195	68.9	57.1	4,400
CAPRI II 2300 Coupe	110.8	174.8	66.9	51	2,591
2800 Coupe	100.8	174.8	66.9	51	2,727
COLT 2 door Coupe	95.3	171.1	63	53.1	2,250
4 door Sedan	95.3	171.1	63.6	53.7	2,250
2 door Hardtop	95.3	171.1	63.6	53.1	2,295
Hardtop GT	95.3	171.1	63.6	53.1	2,425
Wagon	95.3	172	62.8	54.1	2,370
COURIER Pickup	104.3	172	63	61.6	2,555
DATSUN PL510 hardtop	98.4	174.8	63	54.5	2,552
PL510 Sedan	98.4	175	63	55.3	2,559
PL610 Wagon	98.4	177	63	56.1	2,707
HLB210 Sedan	92.7	163	60.8	53.5	2,055
HLB210 Coupe	92.7	162.2	60.8	53	2,055
PL710 Sedan	96.5	171.7	62.2	55.5	2,478
PL710 Coupe	96.5	171.7	62.2	55.5	2,476
PL710 Wagon	96.5	173	62.2	55.9	2,583
280 2 Coupe	90.7	173.2	64.2	51	2,755
280 2 2	102.6	185.4	65	51.2	2,925
PL620 Pickup	100.2	169.3	62.6	60.8	2,380
PL620 Pickup (Long w.b.)	110	184.7	62.6	60.8	2,445
FERRARI Dino	100.4	176.7	71	47.6	3,200
FIAT x 1/9	66.7	158.5	61.8	46.1	2,085
128 Coupe	87.5	156.4	61.4	51.6	1,980
128 4 door Wagon	96.4	158.6	62.6	55.9	1,980
128 Wagon	96.4	159.2	62.6	55.9	2,020
124 Spider	89.7	163.1	63.5	49.2	2,320
124 Coupe	95.3	172.4	66.7	52.7	2,370
131 4 door Sedan	98	171	64.5	53.7	2,460
131 Wagon	98	171.7	64.6	53.3	2,510
HONDA Civic 2 door	86.6	147.8	59.3	52.2	1,687
Civ 2 door (CVCC)	86.6	150	59.3	52.2	1,748
JAGUAR XJ6C	110.8	190.7	69.7	54.1	N.A.
XJ6L	113	194.7	69.7	54.1	4,053
XJ12C	110.8	194.8	69.8	54.1	4,007
XJ12L	113	198.8	69.7	54.1	4,277
JENSEN HEALEY	92	165.5	63.25	48.13	2,200
JENSEN Interceptor	105	188	69	53	4,000
LOTUS Europa Special	91	158	64.5	43	1,250
Ella	91	160	71.5	47.5	2,680
LUV 800	102.4	173.4	63	60.25	2,490

MAKE AND MODEL	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
MASERATI Bora	102.3	177	69.6	44.6	3,730
Merak	102.3	170	69.6	44.6	3,210
Khamsin	100.3	180	71	47	2,810
MAZDA 808 Coupe	91	168	63	53	2,115
808 Wagon	91	169	63	55	2,215
RX 3 Coupe	91	168	63	53	2,315
RX 3 Wagon	91	169	63	55	2,435
RX 4 Hardtop	99	179	66	54	2,715
RX 4 Sedan	99	179	65	56	2,735
RX 4 Wagon	99	183	65	56	2,970
Rotary Pickup	104	173	67	61	2,625
B 1600 Pickup	104	172	63	62	2,515
MERCEDES BENZ 240D	108.3	195.5	69	50.7	3,270
300D	108.3	195.5	69.7	50.7	3,450
230	108.3	195.5	69.7	50.7	3,230
280	108.3	195.5	70.5	56.7	3,160
280 Coupe	108.3	195.5	70.5	54.9	3,170
280S	112.8	205.5	73.6	56.1	3,170
450SE	112.8	205.5	73.6	56.1	4,100
450SEL	116.7	209.4	73.6	56.3	4,400
450SL	96.9	182.3	70.5	50.8	3,180
450SLC	111	196.4	70.5	52.4	3,120
MG B (1974)	91.3	158.3	59.9	50.9	2,287
MG B GT (1974)	91.3	158.3	59.9	50.9	2,430
Model 1500	80	141	54	49.1	1,154
OPEL Manta	95.7	176.1	64.3	51.8	2,108
Manta Rallye	95.7	176.1	64.3	51.3	2,137
Manta Luxus	95.7	176.1	64.3	51.5	2,137
1900 Wagon	95.7	176.2	64.3	53.7	2,287
PEUGEOT 504 Sedan	110.8	182.8	66.7	57	2,650
504 Wagon	114	194.4	66.7	61	3,135
504 Diesel Sedan	110.8	182.8	66.7	57	3,000
504 Diesel Wagon	114	194.4	66.7	61	3,220
PORSCHE 914 1.8	96.5	164.4	65	49	2,105
914 2.0	96.5	164.4	65	49	2,105
911 S	89.4	168.9	63.3	51.9	2,225
Carrera	89.4	168.9	65	51.9	2,225
RENAULT 12 Sedan	96	174	64.5	56.6	2,67
12 Station Wagon	96	176	64.5	57	2,150
157L Coupe	96	172	64	55.1	2,133
17 Gordini Coupe	96	172	64	51.5	2,160
177L Coupe	96	172	64	51.5	2,159
ROLLS-ROYCE Silver Shadow	1120	207.5	72	60	4,100
Silver Shadow (Long w.b.)	124	211	72	60	4,150
Corniche Coupe	120	207.5	72	60	4,100
Corniche Convertible	120	207.5	72	60	5,100
Camargue	120	207.2	71.4	58	5,111
SAAB 99 EMS Sedan	97.75	174	66.5	51.5	2,160
99 LE Sedan	97.75	174	66.5	56.5	2,160
99 LE Wagon Back	97.75	178	66.5	56.5	2,100

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)	Overall Length (in.)	Overall Width (in.)	Overall Height (in.)	Curb Weight (lbs.)
SUBARU DL 4-door Sedan	96.7	164	59.7	54.5	2,040
GL Coupe	96.7	164	59.7	53	2,000
GF Hardtop	96.7	164	59.7	53.1	2,060
DL Wagon	96.7	164.8	59.7	55.9	2,145
4 WD Wagon	96.1	158.7	59.1	57.5	2,190
TOYOTA Corolla 1600 Sedan	93.3	165.2	61.8	54.5	2,219
Corolla 1600 Hardtop	93.3	165.2	61.8	54.5	2,229
Corolla 1600 Wagon	93.3	167.7	61.8	54.7	2,274
Celica ST	95.5	171.5	63.4	51.4	2,482
Celica GT	95.5	171.5	63.4	51.2	2,514
Corona Hardtop	99.4	173.2	63.8	54.1	2,610
Corona Sedan	98.4	173.2	63.4	55.1	2,576
Corona SR 5	98.4	173.2	63.8	54.1	2,645
Corona Wagon	98.4	176.4	63.4	56.2	2,645
Mark II Hardtop	101.7	182.1	64.4	54.7	2,845
Mark II Sedan	101.7	182.1	64.4	55.1	2,845
Mark II Wagon	101.7	182.9	64.4	55.9	2,905
Standard Pickup	101.6	168.7	62.2	61.8	2,465
Long bed Pickup	110	184.6	62.2	61.8	2,520
SR 5 Sport Pickup	101.6	168.7	62.2	61.2	2,485
TRIUMPH Spitfire	83	156.3	58.5	45.6	1,931
TR 6	88	162.1	58	50	2,390
TR 7	85	164.5	66.2	49.9	2,241
VOLKSWAGEN Beetle	94.5	163.4	61	59.1	1,896
Rabbit	94.5	155.3	63.4	55.5	1,830
Scirocco	94.5	155.7	64	51.5	1,940
Dasher	97.2	172.8	63	53.5	2,068
Bus	94.5	179	69.3	77	3,042
Thing (1974)	94.5	148.8	64.6	63.8	1,984
VOLVO 242 2-door Sedan	104	192.6	67.3	56.5	2,852
244 4 door Sedan	104	192.6	67.3	56.5	2,907
245 4 door Wagon	104	192.6	67.3	57.5	3,051
164 4 door Sedan	107	191.7	67.1	56.7	3,190

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)	Overall length (in.)	Overall height (in.)	Overall width (in.)	Unladen weight (lbs.)
ALFA ROMEO 2000 Berlina	101.1	176.7	53.8	61.6	2,390
2000 Spider Veloce	88.6	166.2	48.8	64.1	2,320
2000 GT Veloce	92.5	161.1	50.4	62.2	2,305
AUDI 100 LS	105.3	187.2	55.7	69	2,569
For	97.2	172	53.6	64.7	2,107
AUSTIN Marina 2 door GT	96	169	54.88	69	2,233
4 door	96	172	55.22	69	2,282
BENTLEY 1 Series Sedan	119.5	207.5	60	71	4,634
BMW 2002 Sedan	98.5	176	55	62.5	2,317
2002 i	98.5	176	55	62.5	2,330
3.0 CS Coupe	103.3	189.5	53.8	67.7	3,108
3.0 Bavaria 3.0S Sedan	106	195	57.1	68.9	3,097
3.0 S Sedan	106	195	57.1	68.9	3,263
CAPRI 2000 Coupe	100.8	174	50.5	64.8	2,356
2800 Coupe	100.8	174	50.5	64.8	2,509
COLT 1 door Sedan	95.3	171.1	53.7	63.6	2,205
Coll. Hardtop & GT	95.3	172.2	53.1	63.6	2,183
Coll. Station Wagon	95.3	172	54.1	62.8	2,304
Coll. 2 door Coupe	95.3	172.2	53.1	63	2,161
DAISUN PL610 2 door Hardtop	98.4	174	54.5	63	2,400
PL610 4 dr. Sedan	98.4	174.2	55.3	63	2,425
PL610 Station Wagon	98.4	176.2	55.7	67	2,557
HLB 210 2 door Sedan	92.1	160.6	53.5	60.8	1,915
4 door Sedan	92.1	160.6	53.5	60.8	1,960
2 door Coupe	92.1	160	53	60.8	1,960
PL710 2 door Coupe	96.5	169.3	55.5	62.2	2,293
2 door Sedan	96.5	170.9	55.5	62.2	2,293
1 door	96.5	170.9	55.5	62.2	2,315
2W 2 Coupe	90.7	169.1	53.0	61.1	2,499
PL820 Pickup	100.2	169.3	60.8	62.6	2,306
FIAT 117R	86.7	153.5	46.7	57.8	1,932
128 SL Coupe	87.5	154.5	51.6	61.4	1,901
128 2 door Sedan	96.4	157.2	55.9	63.9	1,890
128 4 door Sedan	96.4	157.2	55.9	63.9	1,920
128 Station Wagon	96.4	157.8	55.9	63.9	1,960
124 Coupe	95.3	169.8	52.8	65.8	2,298
124 Special TC	95.3	165.6	55.9	64.9	2,199
124 Spider	89.8	160.5	49.2	63.5	2,128
124 Station Wagon	95.3	164.8	56.7	64.9	2,248
HONDA Civic 2 door	86.6	146.9	54.2	59.25	1,605
JAGUAR XJ2 Convertible	105	189.6	48.4	66	3,375
XJ6 Sedan	108.8	194.8	54.1	69.75	4,005
XJ12C Sedan	112.8	198.8	54.1	69.75	4,208
JENSEN HEALEY	92	162	48.8	63.2	2,116
JENSEN Interceptor	105	188	53	69	4,000
LOTUS Europa Special	91	158	43	64.5	1,750
MAZDA 808 Coupe	91	168	53	63	2,197
813 Coupe	91	168	53	63	2,335
813 Station Wagon	91	170	55	63	2,450
817 Coupe	97	173	55	62	2,510
812 Sedan	97	173	56	62	2,540
814 Hardtop	99	177	54	66	2,610
814 Sedan	99	179	56	65	2,680
814 Wagon	99	184	56	65	2,875

MAKE AND MODEL	Wheelbase (in.)	Overall length (in.)	Overall height (in.)	Overall width (in.)	Unladen weight (lbs.)
MERCEDES BENZ 220	1108.3	184.5	56.7	69.7	3,070
220 D	1108.3	184.5	56.7	69.7	3,110
280	1108.3	184.5	56.7	69.7	3,295
280 Coupe	1108.3	184.5	54.9	70.5	3,425
450 SE	1112.8	195.3	56.1	73.4	3,995
450 SEL	1116.5	199.2	56.3	73.4	4,030
450 SL	1116.9	172.5	55.2	70.5	3,710
450 SL C	1111	186.6	52.4	70.5	3,765
MG B Mk II	91.1	159.19	49.38	59.94	1,294
MG B GT	91.1	159.19	49.5	59.94	1,426
Midgar	80	144.56	48.23	54.88	1,746
OPEL Manta	95.7	176.1	51.8	64.3	2,141
Manta Rallye	95.7	176.1	51.3	64.3	2,152
Manta Luxus	95.1	176.1	51.5	64.3	2,152
1900 Wagon	95.1	176.2	53.7	64.3	2,185
PANTERA	98.4	175.3	44.1	71.3	3,280
PEUGEOT 504 Sedan	1108	187.8	57	66.7	2,860
504 Station Wagon	1114	194.4	61	66.7	3,105
504 Diesel Sedan	1108	182.8	55.32	66.7	3,000
504 Diesel Wagon	1114	194.4	58.8	66.7	3,220
PORSCHE 914 1 B	96.8	161.2	48.4	65.0	2,139
914 2 D	96.8	161.2	48.4	65.0	2,139
911	89.4	168.9	52	63.4	2,425
911 Carrera	89.4	168.9	52	65	2,425
911 S	89.4	168.9	52	64	2,425
RENAULT 12 Sedan	96	174	56.6	64.5	2,082
12 Station Wagon	96	176	57	64.5	2,293
15 Coupe	96	172	53	64	2,293
17 Gardin	96	172	51.5	64	2,458
17 Gardin Coupe Conv.	96	172	51.5	64	2,535
R12L	96	174	56.6	64.5	2,105
R12TL	96	174	56.6	64.5	2,180
R17TL	96	172	51.5	64	2,359
R17 Coup Conv.	96	172	53	64	2,436
ROLLS ROYCE Silver Shadow	119.5	207.5	60	71	4,634
Silver Shadow Long Wheel	123.5	211.5	60	71	4,685
Corniche Coupe	119.5	207.5	60	72	4,693
Corniche Convertible	119.5	207.5	60	72	4,933
SAAB 99 99 L Sedan	97.4	174	56.7	66.5	2,500
99 LE Sedan	97.4	174	56.7	66.5	2,500
99 LE Wagon Back Sedan	97.4	178.3	56.7	66.5	2,710
Sonnet II	84.6	160	47	59.1	875
SUBARU GL Coupe	96.6	164.4	53.0	59.2	1,980
DL 2 door Sedan	96.6	164.4	54.5	59.2	1,970
DL 4 door Sedan	96.6	164.4	54.5	59.2	2,035
DL Station Wagon	96.6	165.2	55.9	59.2	2,100

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)				
	Overall length (in.)	Overall height (in.)	Overall width (in.)	Overall width (in.)	Unladen weight (lbs.)
TOYOTA Corolla 1200 Sedan	91.9	163.5	53	59.3	1815
Corolla 1600 Coupe	91.9	163.5	53	59.3	1995
Corolla 1600 Sedan	91.9	163.5	53	59.3	2005
Corolla 1600 Station Wag	91.9	165.4	55.3	59.3	2065
Celica ST	95.5	169.2	51.6	63.0	2425
Celica GT	95.5	169.2	51.6	63.0	2469
Corona Sedan	98.4	171.9	55.1	63.4	2310
Corona Hardtop	98.4	171.9	54.1	63.8	2530
Corona SR	98.4	171.9	54.1	63.8	2530
Corona Station Wagon	98.4	174.9	56.3	63.4	2560
Mark II Sedan	101.8	179.3	55.1	64	2820
Mark II Hardtop	101.8	179.3	55.1	64	2820
Mark II Station Wagon	101.8	182.9	56.7	64	2890
TRIUMPH TR 6	88	162.1	50	58	2390
Spitfire 1500	83	155.25	47.5	58.5	1710
VOLKSWAGEN Beetle	94.5	163.4	59.1	61	1896
Super Beetle	95.3	164.8	59.1	62.4	2028
Karmann Ghia Coupe	94.5	165.7	52	64.3	1984
Dasher	97.2	172.8	63	63	1984
Station Wagon	94.5	179.0	76.4	69.3	2745
412 1 door	98.4	183.7	58.1	65.9	2402
412 1 door & Wagon	98.4	183.7	58.1	65.9	2445
Thing (181)	94.5	148.8	63.8	64.6	1984
VOLVO 142 2 door Sedan	103	188	56.5	67.1	2661
144 1 door Sedan	103	188	56.5	67.1	2738
145 4 door Station Wagon	103	188	57.1	67.1	2859
164 4 door Sedan	107	191.7	56.5	67.1	3106

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in)	Unladen weight (lbs)	Overall length (in)	Overall height (in)	Overall width (in)
ALFA ROMEO 2000 Berlina	101	2442	172.7	56.3	61.6
2000 Spider Veloce	88.6	2292	167.9	50.8	64.2
2000 GT Veloce	92.5	2292	161.4	51.8	62.2
AUDI 100 LS 100 GL 2 door Sedan	105.3	2354	182.6	56.1	68.1
100 LS 100 GL 4 door Sedan	105.3	2379	182.6	56.1	68.1
AUSTIN Marina	96	2193	169.1	56	64.8
BENTLEY 1 Se. or Sedan	119.5	4636	203.5	59.75	71
BMW 2002 Sedan	98.5	2260	172	55	62.5
2002 T	98.5	2300	172	55	62.5
3.0 CS Coupe	103.3	2070	186.5	53.8	65.6
3.0 Boro or 3.0 S Sedan	106	3050	192	57.1	68.9
CADILLAC 2000 Coupe	100.8	2333	174	50.7	64.8
2000 Coupe	100.8	2443	174	50.7	64.8
CITROEN SM	116.1	3330	193.4	52.1	72.3
COLT 4 door Sedan	95	2047	163.4	55.3	61.4
Colt Hardtop & GT	95	2075	163.4	54.1	61.8
Colt Station Wagon	95	2130	164.0	56.7	61.4
Colt 2 door Coupe	95	2064	163.4	54.1	61.8
CORVETTE 4 door Sedan	98	1961	161.4	54.9	62.5
Station Wagon	98	2160	166.9	54.9	62.5
DAISUN PL 510 2 door Sedan	95.3	2140	165.4	55.9	61.4
PL610 2 door Hardtop	98.4	2290	172	54.5	63
PL610 4 door Sedan	98.4	2270	172	55.3	63
PL610 Station Wagon	98.4	2410	174.5	55.7	63
1200 Coupe	90.6	11650	155.9	53.1	59.6
1200 Sedan	90.6	11630	156.3	54.7	58.9
240 Z Coupe	90.7	2530	165.2	50.5	64.1
PL620 Pickup	100.1	2290	169.3	60.8	62.6
FIAT 850 Spider	79.8	11590	153	48	59
78 St. Coupe	87.5	800	151.8	51.6	61.4
78 2 door Sedan	96.4	1760	154.2	56	62.2
128 4 door Sedan	96.4	1795	154.2	56	62.2
128 Station Wagon	96.4	11835	54.2	56	62.2
124 Coupe	95.3	2187	165.3	52.8	65.7
124 Sedan	95.3	2038	162.2	55.9	62.4
124 Spider	89.8	2077	159.5	49.2	63.5
124 Station Wagon	95.3	2095	162.2	56.7	64
HONDA Civic 2 door	86.6	1536	139.8	53	53.2
JAGUAR XJ12 Convertible 2 +	105	3318	184.38	51.3	66.06
XJ6 Sedan	108.9	3395	189.6	52.9	69.75
XJ12 Sedan	108.9	3881	189.6	52.9	69.75
JENSEN HEALEY	92	2195	162	48	63.2
JENSEN Interceptor	105	4000	188	53	69
LOTUS Europa Special	91	11250	158	43	64.5
MAZDA 808 Coupe	91	2000	162	53	63
808 Sedan	91	2075	162	53	63
808 Station Wagon	91	2130	162	53	63
813 Coupe	91	2150	162	53	63
813 Sedan	91	2180	162	54	63
813 Station Wagon	91	2265	163	54	63
817 Coupe	97	2325	167	55	62
817 Sedan	97	2335	167	56	62

MAKE AND MODEL	Wheelbase (in)	Unladen weight (lbs)	Overall length (in)	Overall height (in)	Overall width (in)	
MERCEDES BENZ 220	110.8	3070	184.5	56.7	69.7	
220-D	110.8	3110	184.5	56.7	69.7	
280	108.3	3395	184.5	56.7	69.7	
280 Coupe	108.3	3425	184.5	54.9	70.5	
450 SE	112.8	3995	195.3	56.1	73.4	
450 SEL	116.5	4030	199.2	56.3	73.4	
450 SL	96.9	3710	172.5	51.2	70.5	
450 SLC	100	3765	186.6	52.4	70.5	
MG B Mk II Roadster	91	11920	153	19.49	59.94	
MG B GT Mk II Coupe	91	12190	153	19.49	59.94	
Mini Mk III	89	115	2107	43	46.63	54.88
OPEL Mania	95.7	2183	171.0	51.3	64.3	
Mania Rallye	95.7	2205	171.0	51.3	64.3	
Mania Luxus	95.7	2183	171.0	51.3	64.3	
1900 Wagon	95.7	2227	164.6	53.3	64.3	
GT	95.7	2120	161.9	47.4	62.2	
PANTERA	98.4	3200	176	44	73	
PEUGEOT 504 Sedan	108	2750	177	57	66	
504 Station Wagon	114	2932	189	61	67	
PORSCHE 914 1.7	96.5	1900	159.4	48.4	65.0	
914 2.0	96.5	1907	159.4	48.4	65.0	
911 T	89.5	2250	168.4	52	64.4	
911 E	89.5	2250	168.4	52	64.4	
911 S	89.5	2250	168.4	52	64.4	
RENAULT 12 Sedan	96	2093	172.5	56.6	64.5	
12 Station Wagon	96	2225	175	57	64.5	
15 Coupe	96	2227	170	51.5	64	
17 Coupe	96	2392	170	51.5	64	
ROLLS ROYCE Silver Shadow Sedan	119.5	4636	203.5	59.75	71	
Silver Shadow Long Wheelbase Sedan	123.5	4867	207.5	59.75	71	
Corniche Coupe	119.5	4760	203.5	58.75	72	
Corniche Convertible	119.5	4700	203.5	58.75	72	
SAAB 99 99 L Sedan	97.4	2480	173.2	56.7	66.5	
99 LE Sedan	97.4	2500	173.2	56.7	66.5	
96 Sedan	98.3	2030	167.3	57.9	62.6	
Sonneet III	84.6	1875	159.8	46.9	59.1	
SUBARU GL Coupe	96.6	1845	159.1	52.8	59.2	
DL 2 door Sedan	96.6	1870	159.1	54.5	59.2	
DL 4 door Sedan	96.6	1880	159	54.5	59.2	
DL Station Wagon	96.6	1935	159.3	55.5	59.2	
TOYOTA Corolla 1200 Sedan	91.9	1725	159.4	54.1	59.3	
Corolla 1600 Coupe and Sedan	91.9	1915	160	54.1	59.3	
Corolla 1600 Station Wagon	91.9	2000	160	55.3	59.3	
Corina	95.5	2202	168	54.5	61.8	
Colica ST	95.5	2300	168	54.5	62.0	
Corona Sedan	95.7	2170	170.7	54.7	61.8	
Corona Hardtop	95.7	2170	170.7	54.5	61.8	
Corona Station Wagon	96.9	2220	171.3	55.9	61.8	
Mark II Sedan	101.8	2700	174.4	55.1	64	
Mark II Hardtop	101.8	2700	173.4	55.1	64	
Mark II Station Wagon	101.8	2760	176.6	55.9	64	
TRIUMPH Stag	100	2807	173.7	49.5	63.5	
TR 6	88	2156	155	50	58	
GT 6 Mk 3	83	1954	149	48	57	
Sprite Mk III	83	1728	149	48	57	

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)	Unladen weight (lbr.)	Overall length (in.)	Overall height (in.)	Overall width (in.)
VOLKSWAGEN Beetle	94.5	1826	159.8	59.1	61
Super Beetle	95.3	1984	163	59.1	62.4
Karmann Ghia Coupe	94.5	1918	165	52	64.3
VW Type 3	94.5	2226	170.8	57.9	63.2
VW Squareback Sedan	94.5	2282	172	57.9	64.6
Station Wagon	94.5	3043	177.4	76.4	67.7
411 Four door	98.4	2425	180.4	58.1	65.9
411 Three door	98.4	2469	180.4	58.1	65.9
Truck (1811)	94.5	1995	148.8	63.8	64.6
VOLVO 142 2 door Sedan	103	2635	188.3	56.5	67.1
144 4 door Sedan	103	2697	188.3	56.5	67.1
145 4 door Station Wagon	103	2767	188.3	57.1	67.1
154 4 door Sedan	107	2999	192.3	56.5	67.1
1800 ES Sport Coupe	96.5	2389	176.9	50.4	67.0

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)	Unladen weight (lbs.)	Overall length (in.)	Overall height (in.)	Overall width (in.)
ALFA ROMEO 2000 Berlina	101.1	2,442	172.7	56.3	61.6
2000 Spider Veloce	88.6	2,292	167.9	50.8	64.2
2000 GT Veloce	102.5	2,292	161.4	51.8	62.2
ASTON MARTIN DB5 V8	102.75	3,800	180.5	52.25	72
AUDI Super 90 2 door Sedan	98.0	2,201	173.8	57.2	64
Super 90 4 door Sedan	98.0	2,235	173.8	57.2	64
Super 90 Station Wagon	98.0	2,302	173.8	57.2	64
100 100 LS 2 door Sedan	105.3	2,354	182.6	56.1	68.1
100 GL 2 door Sedan	105.3	2,354	182.6	56.1	68.1
100 100 LS 4 door Sedan	105.3	2,379	182.6	56.1	68.1
100 GL 4 door Sedan	105.3	2,379	182.6	56.1	68.1
BENTLEY T Series Sedan	91	4,636	203.5	59.75	71
BMW 2002 Sedan	98.5	2,073	166.5	55	62.5
2002 Ti	98.5	2,073	166.5	55	62.5
3.0 CS Coupe	103.3	3,046	182.5	53.8	65.6
3.0 Bavaria	106	2,866	185	57	68.9
CARRI 1600 Coupe	1100.8	2,151	167.8	50.7	64.8
2000 Coupe	1100.8	2,134	167.8	50.7	64.8
2600 Coupe	102.8	2,376	167.8	50.7	64.8
CITROEN DS 21 Pallas	23	2,866	190.5	58	70.5
D Savia	23	2,866	190.5	58	70.5
DS 21 Station Wagon	23	3,087	196.5	60.2	70.5
SM	116.1	3,198	193.6	52.1	75
COLT 4 door Sedan	95	2,042	160.6	55.3	61.4
Colt Hardtop	95	2,075	160.6	54.1	61.8
Colt Station Wagon	95	2,130	161.2	56.7	61.4
CRICKET 4 door Sedan	98	961	161.4	54.9	62.5
Station Wagon	98	2,160	166.9	54.9	62.5
DAISUN 1200 Sedan	93.6	1,587	150.8	54.7	58.9
1200 Coupe	90.6	1,609	150.4	53.1	59.6
510 4 door Sedan	95.3	2,04	162.2	55.9	61.4
510 2 door Sedan	95.3	2,039	160.2	55.9	61.4
510 Station Wagon	95.3	2,127	162.2	56.5	61.4
240 2 Coupe	90.7	2,350	162.8	50.5	64.1
FIAT 850 Spide	79.8	1,580	150.5	48	59
128 2 door Sedan	96.4	1,735	151.8	56.4	62.6
128 Station Wagon	96.4	1,805	152	56.4	62.6
24 Coupe	95.3	2,167	163.5	52.8	65.7
24 Sedan	95.3	1,983	159.1	55.9	63.4
24 Spide	89.8	2,047	156.3	49.2	63.5
24 Station Wagon	95.3	2,045	159.3	56.7	64
HONDA 600 Sedan	78.8	1,356	125.6	52.4	52.5
MX Coupe	78.7	1,317	123.5	50.4	51
JAGUAR XJ2 Roadster and	105	3,318	184.2	51.2	66.06
XJ2 Sedan	108.9	3,395	189.6	52.9	69.75
JENSEN Interceptor III	103	1,695	188	53	69.9

MAKE AND MODEL	Wheelbase (in.)	Unladen weight (lbs.)	Overall length (in.)	Overall height (in.)	Overall width (in.)
LOTUS Elan Drophead and Cab	84	1,240	145	25.45	56
Lotus + 2	96	2,000	168	47	63.5
Europa	91	1,250	158	43	64.5
Europa Twin Cam	91	1,300	158	43	64.5
MAZDA R100 Coupe	88.9	2,065	150.8	52.9	58.3
808 Coupe	91	1,940	160	53	61
808 Sedan	91	1,960	160	53	63
808 Wagon	91	2,040	161	55	63
Rx 3 Coupe	91	2,080	160	54	63
Rx 3 Sedan	91	2,090	160	54	63
Rx 3 Wagon	91	2,201	161	55	63
Rx 2 Coupe	91	2,200	163	56	62
Rx 2 Sedan	97	2,320	163	56	62
618 Coupe	97	2,130	163	56	62
618 Sedan	97	2,150	163	55	62
180C Station Wagon	98.4	2,540	172	56.3	64.2
MERCEDES BENZ 220	108.3	3,093	184.5	56.7	69.7
220 D	108.3	3,165	184.5	56.7	69.7
250	108.3	3,269	184.5	56.7	69.7
250 Coupe	108.3	3,269	184.5	54.9	70.5
280 SE	108.3	3,527	192.9	56.7	71.3
280 SE 4.5	108.3	3,690	192.9	56.7	71.3
180 SEL 4.5	112.2	3,766	196.8	56.7	71.3
300 SE 4.5	112.2	3,877	196.9	55.5	71.3
350 SL	96.9	3,708	172.1	52	70.5
600 (7 Passenger)	153.5	6,126	245.7	59	76.8
MG B Mk II Roadster	91	1,920	152	49.38	59.94
MG B GT Mk II Coupe	91	2,190	153	49.5	59.94
Midlet Mk III	80	1,517	137.63	48.63	54.88
NSU 1000 C	88	1,452	150	53.5	58.5
TT	88	1,452	150	53.5	58.5
1200 C	106	1,587	157.5	54.7	58.5
OPEL 2 door Sedan	95.1	1,981	166	53	61.9
Deluxe 2 door Sedan	95.1	1,987	161.6	53	61.9
Station Wagon	95.1	2,082	164.6	53.9	61.9
1900 2 door Sedan	95.7	2,127	164.6	52.6	64.3
1900 4 door Sedan	95.7	2,178	164.6	52.6	64.3
1900 Wagon	95.7	2,216	164.6	53.3	64.3
1900 Sport Coupe	95.7	2,160	171	51.2	64.3
1900 Rallye	95.7	2,182	171	50.9	64.3
GT	95.7	2,121	161.9	47.4	62.2
PANTERA	98.4	1,066	167	43.4	71.3
PEUGEOT 304 Sedan	101.9	1,920	162.9	55.4	61.8
304 Station Wagon	101.9	2,000	158	56	61.8
504 Sedan	108	2,650	177	57.5	66.1
PORSCHE 914	96.5	1,900	157	48	60
911 T	89.5	2,250	163.9	51.97	63.39
911 E	89.5	2,250	163.9	51.97	63.39
911 S	89.5	2,250	163.9	51.97	63.39

Passenger Car Specifications

MAKE AND MODEL	Wheel base (in)	Wheel track (in)	Overall length (in)	Overall height (in)	Overall width (in)
RENAULT 12 Sedan	96	2 050	172.5	56.5	64.5
12 Station Wagon	96	2 101	175	57	64.5
16	105.8	2 271	168.4	57.3	64.9
ROLLS ROYCE Silver Shadow	119.5	4 636	203.5	59.75	71
Silver Shadow Long Whibse	123.5	4 867	203.5	59.75	71
Corniche Coupe	119.5	4 760	203.5	58.75	72
Corniche Convertible	119.5	4 700	203.5	58.75	72
SAAB 99 Sedan	97.3	2 350	171.2	57.1	65
99 E Sedan	97.3	2 371	171.2	57.1	66.1
96 Sedan	98	2 095	165	58	62
Sonne III	84.6	1 670	153.5	46.9	59
Station Wagon	98	2 150	169	58	62
SUBARU G 4 door Sedan	95.3	1 650	153.5	54.7	59.7
G 2 door Sedan	95.3	1 671	153.5	54.7	58.7
G Station Wagon	95.3	1 760	152.8	55.7	58.3
TOYOTA Corolla 1200 Sedan	91.9	1 725	161.4	54.1	59.3
Corolla 1600 Coupe and Sed	91.9	1 915	157.5	54.1	59.3
Corolla 1600 Station Wagon	91.9	2 000	157.5	54.1	59.3
Corina 1600	95.5	1 914	162.8	54.5	61.8
Celica 2000	95.5	2 266	163.9	51.6	63.7
Corona Sedan	95.7	2 170	168.2	55.1	61.8
Corona Hardtop	95.7	2 170	168.2	54.5	61.8
Mark II Sedan	98.8	2 310	171.3	55.3	63.2
Mark II Hardtop	98.8	2 310	171.3	54.0	63.2
Mark II Station Wagon	98.8	2 430	171.5	55.1	63.2
TRIUMPH Stag	100	2 807	173.7	49.5	63.5
TR 6	88	2 156	155	50	58
GT 6 Mk 3	83	1 904	149	48	57
Spartan Mk III	83	1 708	149	48	57
VOLKSWAGEN Beetle	94.5	1 807	158.6	59.1	61
Karmann Ghia Coupe	94.5	1 918	164	52	64.3
VW Type 3	94.5	2 226	170.9	57.9	63.2
VW Squareback Sedan	94.5	2 282	170.9	57.9	63.2
Super Beetle	95.3	1 918	161.8	59.1	62.4
Station Wagon	94.5	2 042	170.4	56.4	60.5
411 Four door	98.4	2 425	179.2	58.5	64.9
411 Three door	98.4	2 469	179.2	58.5	64.9
VOLVO 142 2 door Sedan	103.2	2 546	182.7	55.7	68.1
142 E 2 door Sedan	103.2	2 546	182.7	56.7	68.1
144 4 door Sedan***	103.2	2 590	182.7	56.7	68.1
145 4 door Station Wagon**	103.2	2 698	182.7	56.1	68.1
164 4 door Sedan****	107.1	2 908	185.6	56.7	68.1
1800 E Sports Coupe	96.5	2 477	171.3	50.4	67
1800 ES Sports Coupe	96.5	2 614	172.6	50.4	67

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in)	Unladen weight (lb)	Overall length (in)	Overall height (in)	Overall width (in)
ALFA ROMEO 1750 Berlina	1101.2	2327	172.8	56.2	61.6
1750 Spider Veloce	88.6	2167	167.3	50.8	64.2
1750 GT Veloce	92.5	2167	161	51.8	62.2
ASTON MARTIN DBS	1102.75	3500	180.95	52.25	72
AUDI Super 90 2 door Sedan	98.0	2205	173.8	57.2	64
Super 90 4 door Sedan	98.0	2235	173.8	57.2	64
Super 90 Station Wagon	98.0	2302	173.8	57.2	64
100 LS 2 door Sedan	105.3	2325	182.6	56.1	68.1
100 LS 4 door Sedan	105.3	2380	182.6	56.1	68.1
AUSTIN America	92.5	1852	146.75	53	60.38
BENTLEY T Series	119.5	4636	203.5	59.75	71
BMW 1600 Sedan	96.4	2073	166.5	55	62.5
2002 Sedan	96.4	2073	168.5	55	62.5
2500 Sedan	106	2866	185	57.1	68.9
2800 Sedan	106	2866	185	57.1	68.9
2800 CS Coupe	103.3	2932	183	53.8	65.6
3.0 Liter	106	2866	185	57.1	68.9
CAPRI 1600 Coupe	100.8	2115	167.8	50.7	64.8
CITROEN DS 21	1123	2855	190.5	58	70.5
D Seer	123	2855	190.5	58	70.5
COLT 4 door Sedan	95.3	2020	160.6	53.6	61.4
Collordiaz	95.3	2055	160.6	52.5	61.4
Coll Station Wagon	95.1	2111	162	55.6	61.4
CHEVLET 4 door Sedan	98	1976	162	54.6	62.5
DATSUN 1200 Sedan	90.6	1587	152.6	54.7	58.9
1200 Coupe	90.6	1609	152	53.6	59.6
310 4 door Sedan	95.3	2041	162.2	55.9	61.4
310 2 door Sedan	95.3	2040	162.2	55.9	61.4
240 Z Coupe	90.7	2050	162.8	50.5	64.1
310 Station Wagon	95.3	2116	162.2	55.1	61.4
FALCON 850 Coupe	79.8	1590	143.8	53.2	59.1
850 Sedan	79.8	1512	140.8	54.5	56.1
850 Spider	79.8	1590	150.5	48	59
140 Race	79.8	1622	150.5	47.4	59
124 Coupe	95.3	2178	162.5	52.8	65.7
124 Sedan Special	95.3	1995	159.1	55.9	63.4
124 Spider	89.8	2046	156.3	49.2	62.5
124 Station Wagon	95.3	2084	159.5	56.7	64
FONDA 600	78.8	1355	125.0	52.4	52.5
HUAR V 12	105	3378	184.38	51.3	66.06
IE E Coupe and Roadster	96	2464	175.25	48	65.25
IE Sedan	108.9	3095	189.6	52.9	69.75
HENSEN Interceptor II	105	3900	186	53	69
LANCIA Fulvia Sedan 1.3	98.5	2310	163	55	61
Fulvia Coupe Rallye 1.35	92	2100	156	51	61
Fulvia Coupe 1.6 MF	92	1870	156	51	63
Flavia Sedan	105	2645	180	59	64
Flavia Coupe	97.5	2600	179	52	63
LOTUS Elan Drophead and Cab	84	1340	145.25	45	56
Lotus + 2	96	2000	168	47	63.5
Luada	91	250	158	43	64.5
MASERATI Ghibli Coupe	100.2	3500	180.7	45.6	70.8
Ghibli Spyder	100.3	3500	180.7		70.8
Mar	102.2		86.6	48	69.2

MAKE AND MODEL	Wheelbase (in)	Unladen weight (lb)	Overall length (in)	Overall height (in)	Overall width (in)
MAZDA R 100 Coupe	88.9	2065	150.8	52.9	58.3
1200 Coupe	88.9	1630	149.4	52.9	58.3
1200 Sedan	88.9	1575	149.4	54.9	58.3
1200 Station Wagon	88.9	1650	145.6	55.3	58.3
616 Coupe	97	2130	163	56	62
616 Sedan	97	2150	163	55	62
1800 Sedan	98.4	2315	172	56.2	64.2
1800 Station Wagon	98.4	2540	172	56.3	64.2
MERCEDES BENZ 220	108.2	3070	184.5	56.7	69.7
220-D	108.3	3149	184.5	56.7	69.7
230	108.3	3279	184.5	56.7	69.7
230 Coupe	108.3	3182	184.5	54.9	70.5
280 S	108.3	3366	192.9	56.7	71.3
280 SE	108.3	3424	192.9	56.7	71.3
280 SEL	112.2	3524	192.8	56.7	71.3
280 SL	94.5	3109	168.7	52	69.3
280 SE 3.5 Coupe/Convertible	108.3	3687	192.1	55.9	72.6
300 SEL 3.5	112.2	3838	196.9	55.5	71.3
300 SEL 6.3	112.2	4070	196.9	55.9	71.3
400 (7 Passenger)	153.5	6031	245.7	59	76.8
MG B Mk II Roadster	91	1920	153.19	49.38	59.94
MG B GT Mk II Coupe	91	2190	153.19	49.5	59.94
Midget Mk III	80	1512	137.63	48.63	54.88
NSU 1000 C	88	1452	150	53.5	58.5
11	88	1452	150	53.5	58.5
1200 C	96	1587	157.5	54.7	58.5
OPEL 2 door Sedan	95.1	2172	161.6	53	61.9
Deluxe 2 door Sedan	95.1	2172	161.6	53	61.9
Wagon	95.1	1838	164.6	53.9	61.9
1900 2 door Sedan	95.7	2125	164.6	52.6	64.3
1900 4 door Sedan	95.7	2169	164.6	54.5	64.3
1900 Wagon	95.7	2216	164.6	53.3	64.3
1900 Sport Coupe	95.7	2154	71	52	64.3
1900 Rallye	95.7	2176	71	50.9	64.3
G7	95.7	1838	164.6	47.4	62.2
PEUGEOT 304 Sedan	104	1930	162.9	55.4	61.8
304 Station Wagon	103	2007	158	56	61.8
304 Sedan	108	2650	177	57.5	66.5
PORSCHE 914	96.5	1982	156.8	48	65.0
914/6	96.5	2070	156.8	48	65.0
911 T	89.5	2250	163.9	51.97	63.3
911 E	89.5	2250	163.9	51.97	63.3
911 S	89.5	2250	163.9	51.97	63.3
RENAULT 10	89	1907	167	55	60
16	103.8	2271	168.4	57.3	64.9
ROLLS ROYCE Silver Shadow	119.5	4636	203.5	59.75	71
ROYAL 2000 TC	103.4	2810	178.5	54.75	66
3500 S	103.4	3184	178.5	54.75	66
SAAB 99 Sedan	97.3	2360	171.2	57.1	66.1
96 V 4 Sedan	98	1995	165	58	67
900er III	84.6	1670	153.5	46.9	59
Station Wagon	98	2150	169	58	62
SIMCA 1204 4 door Sedan	99.2	2103	155.3	55.7	62.5
SUBARU Star 4 door Sedan	95.3	1640	154.7	54.7	58
Star 2 door Sedan	95.3	1620	154.7	54.7	58
Star Station Wagon	95.3	1731	154.7	54.7	58

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)	Unladen weight (lbs.)	Overall length (in.)	Overall height (in.)	Overall width (in.)
TOYOTA Corolla 1200 Coupe &	91.9	1,225	161.4	54.1	59.3
Corolla 1200 Station Wagon	91.9	1,805	161.8	55.3	59.3
Corolla 1600 Coupe and Sedan	91.9	1,915	157.5	54.1	59.3
Corolla 1600 Station Wagon	91.9	2,000	157.5	54.1	59.3
Corona Sedan	95.7	2,170	166.9	55.1	61.8
Corona Hardtop	95.7	2,170	166.7	54.5	61.8
Mark II Sedan	98.8	2,310	175.0	55.3	63.2
Mark II Hardtop	98.8	2,310	175.0	54.9	63.2
Mark II Station Wagon	98.8	2,430	171.5	56.1	63.2
Crown Sedan	105.9	2,965	183.7	56.9	66.5
Crown Station Wagon	105.9	3,140	184.6	56.9	66.5
TRIUMPH Stag	100	2,807	173.7	49.5	63.5
TR 6	88	2,156	155	50	58
GT 6 Mk 3	83	1,904	149	48	57
Spirit Mk III	83	1,652	149	48	57
VOLKSWAGEN Beetle	94.5	1,807	158.6	59.1	61
Karmann Ghia Coupe	94.5	1,918	163	52	64.3
VW Type 3	94.5	2,226	170.9	57.9	63.2
VW Squareback Sedan	94.5	2,282	170.9	57.9	63.2
Super Beetle	95.3	1,918	161.8	59.1	62.4
Station Wagon	94.5	2,888	174.0	76.4	69.5
411 Four door	98.4	2,425	179.2	58.5	64.9
411 Three door	98.4	2,469	179.2	58.5	64.9
VOLVO 142 2 door Sedan	103.1	2,640	182.7	56.7	68.3
142 E 2 door Sedan	103.1	2,662	182.7	56.7	68.3
144 4 door Sedan	103.1	2,695	182.7	56.7	68.3
145 4 door Station Wagon	103.1	2,816	182.7	56.7	68.3
164 4 door Sedan	107.1	2,937	185.6	56.7	68.3
1800 E Sports Coupe	96.5	2,541	173.3	50.5	67

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)	Unladen weight (lbs.)	Overall length (in.)	Overall height (in.)	Overall width (in.)
ALFA ROMEO 1750 Berlina	110.1	2,270	172.8	56.3	61.6
1750 Spider Veloce	88.6	2,116	167.3	50.8	64.2
1750 GT Veloce	92.5	2,138	161	51.8	62.2
ASTON MARTIN DBS	102.75	3,500	180.5	52.25	72
AUDI Super 90 2 door Sedan	98.0	2,205	173.8	55.9	63.7
Super 90 4 door Sedan	98.0	2,235	173.8	55.9	63.7
Super 90 Station Wagon	98.0	2,302	173.8	55.4	64.0
100 LS 2 door Sedan	105.2	2,325	182.6	54.6	68.1
100 LS 4 door Sedan	105.2	2,380	182.6	54.6	68.1
AUSTIN America	93.5	1,852	146.75	53	60.38
BENTLEY T Series	119.5	4,635	203.5	59.75	71
BMW 1600 Sedan	96.4	2,073	166.5	55	62.5
2002 Sedan	96.4	2,073	168.5	55	62.5
2000 Sedan	100	2,335	177	57	67
2500 Sedan	106	2,866	185	57.1	68.9
2800 Sedan	106	2,866	185	57.1	68.9
2800 GS Coupe	103.3	2,932	183	53.8	65.6
CITROEN DS 21	123	2,855	190.5	58	70.5
ID 19	123	2,855	190.5	58	70.5
DAISUN P1510 4 door Sedan	95.3	2,094	162.2	55.7	61.4
P1510 2 door Sedan	95.3	2,057	160.2	55.1	61.4
240 2 Coupe	90.7	2,300	162.8	50.5	64
SPI3 Convertible	89.8	2,083	155.7	52.2	58.9
SPI3-1 Convertible	89.8	2,116	155.7	52.2	58.9
P1510 Station Wagon	95.3	2,215	163	56.5	61.4
ENGLISH FORD Corina 4 door	98	1,978	168.5	54.7	64.9
Corina 2 door	98	1,926	168.5	54.7	64.9
Corina GT 2 door	98	1,957	168.5	54.7	64.9
Corina 4 door Station Wagon	98	2,178	169.5	54.7	64.9
FERRARI 365 GT 2 + 2	104.2	3,487	207	53	70
FIAT 850 Coupe	79.8	1,577	143.8	43.2	59.1
850 Sedan	79.8	1,480	140.8	44.5	56.1
850 Spider	79.8	1,555	150.5	48	59
850 Racer	79.8	1,631	150.5	47.4	59
124 Coupe	95.3	2,160	163	51.3	65.7
124 Sedan Special	95.3	962	159.5	55.9	62.4
124 Spider	89.8	2,085	156	49	63.5
124 Station Wagon	95.3	2,084	159.5	53.7	64
HONDA 600	78.8	1,355	150	52.4	52.5
JAGUAR XK E Coupe and Road	96	2,464	175.25	48	65.25
XK E 2 + 2 Coupe	105	2,744	184.4	50.1	65.25
XJ Sedan	108.9	3,395	189.6	52.9	69.75
LANCIA Fulvia Sedan 1.3	98.5	2,310	163	55	61
Fulvia Coupe Rallye 1.35	92	2,100	156	51	61
Fulvia Coupe 1.6 HF	92	1,870	156	51	62
Fulvia Sedan	105	2,645	180	59	64
Fulvia Coupe	97.5	2,600	179	52	63
LOTUS Elan Drophead and Co	84	1,340	145.25	45	56
Elan + 2	96	2,000	168	47	63.5
Europa	91	1,250	158	43	64.5
MASTRATI Ghbi Coupe	100.3	3,500	180.7	45.6	70.8
Ghbi Spider	100.3	3,500	180.7	45.6	70.8
107	102.3	1,806	148	48	69.2

MAKE AND MODEL	Wheelbase (in.)	Unladen weight (lbs.)	Overall length (in.)	Overall height (in.)	Overall width (in.)
MERCEDES BENZ 220	110.8	2,890	184.5	56.7	69.7
220 D	108.2	3,000	184.5	56.7	69.7
230	110.8	3,000	184.5	56.7	69.7
250 Coupe	110.8	3,000	184.5	54.9	70.5
280 S	108.2	3,220	192.9	56.7	71.3
280 SE	108.2	3,270	192.9	56.7	71.3
280 SEL	112.2	3,305	196.8	56.7	71.3
280 SL	94.5	3,060	168.7	52	69.2
280 SE 3.5 Coupe/Convertible	108.2	3,460	192.1	55.9	72.6
300 SEL 3.5	112.2	3,680	196.9	55.5	71.3
300 SEL 6.3	112.2	3,890	196.9	55.9	71.3
600 (7 Passenger)	153.5	5,870	245.7	59	76.8
MG B Mk II Roadster	91	1,920	153.19	49.38	59.94
MG B GT Mk II Coupe	91	2,190	153.19	49.5	59.94
Midget Mk III	80	1,270	141.8	63	54.88
NSU 1000 C	88	1,452	150	53.5	58.5
TT	88	1,452	150	53.5	58.5
1200 C	96	1,587	157.5	54.7	58.5
OPEL Kadett 2 door Sedan	95.1	1,691	161.6	53	61.9
Kadett Deluxe Sport Coupe	65.1	1,730	164.6	53.1	61.9
GM Rallye Kadett Sport Car	95.1	1,783	164.6	52.8	61.9
Kadett Deluxe Wagon	95.1	1,808	164.4	53.9	61.9
Kadett Deluxe Sport Sedan	95	1,730	164.6	53.1	61.9
GT	95.7	1,881	161.9	47.7	62.2
PEUGEOT 504 Sedan	108	2,650	177	57.5	66.5
404 Station Wagon	111.8	2,425	187	58.75	64
POESCHE 914	96.5	1,984	156.8	48.4	65.0
914/6	96.5	2,270	156.8	48.4	65.0
911 T	89.29	2,249	163.9	51.97	63.3
911 E	89.29	2,249	163.9	51.97	63.3
911 S	89.5	2,249	163.9	51.97	63.3
RENAULT 10	89	1,977	167	55	60
16	104.8	2,271	168.4	57.3	64.9
ROLLS ROYCE Silver Shadow	119.5	4,636	203.5	59.75	71
ROVER 2000 Automatic	103.4	2,267	178.5	54.75	66
2000 TC	103.4	2,810	178.5	54.75	66
SAAB 90 Sedan	97.3	2,360	171.2	57.1	66.1
96 V-4 Sedan	98	1,995	165	58	62
Sonett III	84.6	1,670	153.5	46.9	59
Station Wagon	98	2,150	169	58	62
SIMCA 1204 4 door Sedan	99.2	2,103	155.3	55.7	62.5
1204 4 door Station Wagon	99.2	2,231	155.3	55.7	62.5
SUBARU Star 4 door Sedan	95.2	1,630	155	54.7	58
Star Station Wagon	95.2	1,730	152.8	55.7	58
360 Sedan	70.9	925	117.9	52.1	51
SUNBEAM Arrow Sedan	98.5	2,087	169.25	54.75	62.5
Alpine Coupe	98.5	2,216	174.5	55	64.5
Alpine GT	98.5	2,210	174.5	53.5	64.5

Passenger Car Specifications

MAKE AND MODEL		Wheelbase (in)	Unladen weight (lb)		Overall length (in)	Overall height (in)	Overall width (in)
TOYOTA Corolla Coupe and Se	90	106.6	1518	1543	58.5		
Corolla Station Wagon	90	103.1	154	55.1	58.7		
Corona Sedan	95.3	2235	162.4	55.9	61		
Corona Hardtop	95.3	2235	162.4	54.1	61.6		
Mark II Sedan	98.8	2290	170.5	55.3	63.4		
Mark II Hardtop	98.8	2290	170.5	54.9	63.4		
Mark II Station Wagon	98.8	2435	171.5	56.1	63.2		
Crown Sedan	105.9	2965	183.7	56.9	66.5		
Crown Station Wagon	105.9	3140	184.6	57.7	66.5		
TRIUMPH TR 6	88	2156	155	150	58		
GT 6	83	1904	147	147	57		
Spirite Mk III	83	1652	147	147.5	57		
VOLKSWAGEN 1500 Sedan	94.5	1808	158.2	59.1	61		
Karmann Ghia Coupe	94.5	1918	163	52.4	64.3		
1600 Fastback	94.5	2227	170.9	57.9	63.2		
1600 Squareback	94.5	2282	170.9	57.9	63.2		
VOLVO 164 4 door Sedan	106.3	2937	185.6	56.7	68.3		
144 4 door Sedan	102.4	2635	182.7	56.7	68.3		
142 2 door Sedan	102.4	2579	182.7	56.7	68.3		
145 4 door Station Wagon	102.4	2751	182.7	56.7	68.3		
1800 E Sports Coupe	96.5	2529	173.3	50.5	67		

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)	Unladen weight (lbs.)	Overall length (in.)	Overall height (in.)	Overall width (in.)
ALFA ROMEO 1750 Berlina	110 1/2	2,270	172 8/8	56 3/8	61 6/8
1750 Spider Veloce	88 6/8	2,116	167 3/8	50 8/8	64 2/8
1750 GT Veloce	92 5/8	2,138	161	51 8/8	62 2/8
ASTON MARTIN DBS	110 2/8	3,500	180 5/8	52 2/8	72
AUSTIN America	93 5/8	1,852	146 7/8	53	60 3/8
AUSTIN HEALEY Sprite Mk II	80	1,512	131 6/8	48 6/8	54 8/8
BENTLEY T Series	119 5/8	4,635	203 5/8	59 7/8	71
BMW 1600 Sedan	92 4/8	2,073	166 5/8	55	62 5/8
2002 Sedan	94 4/8	2,773	188 5/8	55 1/8	67 5/8
2000 Sedan	100	2,535	177	57 1/8	67
2300 Sedan	106	2,866	185	57 1/8	68 9/8
2800 Sedan	106	2,804	185	57 1/8	68 9/8
CITROEN DS 21	123	2,855	197 5/8	58	70 5/8
TD 19	123	2,855	197 5/8	58	70 5/8
DAISUN PL510 4 door Sedan	95 7/8	2,094	162 2/8	55 1/8	64 4/8
PL 510 2 door sedan	95 3/8	2,030	160 2/8	55 1/8	64 4/8
SP311 Convertible	89 8/8	2,083	155 7/8	52 2/8	58 9/8
SR 311 Convertible	89 8/8	2,161	155 7/8	52 2/8	58 9/8
PL510 Station Wagon	95 7/8	2,265	162 2/8	56 5/8	67 4/8
ENGLISH FORD Cortina 4 door (D)	98	1,978	168 5/8	54 7/8	64 9/8
Cortina 2 door	98	1,926	168 5/8	54 7/8	64 9/8
Cortina GT 2 door	98	1,957	168 5/8	54 7/8	64 9/8
Cortina 4 door Station Wagon	98	2,178	169 5/8	54 7/8	64 9/8
FERRAR 365 GT 2 + 2	94 2/8	1,447	157 7/8	57	70
FIAT 850 Coupe	79 7/8	1,645	143 8/8	53 2/8	59
850 Sedan	79 8/8	1,495	140 8/8	54 5/8	56 1/8
850 Spider	79 8/8	1,623	150 3/8	48 6/8	59
124 Coupe	95 2/8	2,160	162	51 3/8	65 2/8
124 Sedan	95 2/8	2,060	158 7/8	53 9/8	65
124 Spider	89 7/8	2,085	156 3/8	49 2/8	63 5/8
124 Station Wagon	95 2/8	2,208	158 1/8	56 7/8	65
HONDA 900	78 8/8	1,380	126 0/8	52 4/8	51 8/8
JAGUAR XKE Coupe and Roadster	96	2,464	175 2/8	48 1/8	65 5/8
XKE 2 + 2 Coupe	105	2,744	184 4/8	50 1/8	65 2/8
XJ Sedan	108 6/8	2,395	189 6/8	52 9/8	69 2/8
LANCIA Fulvia GT Sedan	98	2,170	162	52	61
Fulvia Coupe Rally	92	2,049	156	51	61
Fulvia Sport Zagato	92	1,960	161	47	62
Fulvia Coupe H.T.	92	1,812	156	51	61
Fulvia Sedan	105	2,600	182	60	64
LOTUS Elan Drophead and Coup	84	1,340	145 2/8	45	56
Elan - 2	96	2,000	168	47	63 5/8
Europa	91	1,250	158	43	64 5/8
MASERATI Quattroporte	109 2/8	3,196	196	53 5/8	68
Ghibli	100 3/8	2,807	183 6/8	50 8/8	70 8/8
MERCEDES BENZ 220	108 3/8	2,890	184 5/8	56 7/8	69 7/8
220 D	108 3/8	3,000	184 5/8	56 7/8	69 7/8
230	108 3/8	2,945	184 5/8	56 7/8	69 7/8
250	108 3/8	3,000	184 5/8	56 7/8	69 7/8
280 S	108 2/8	3,220	192 9/8	56 6/8	71 2/8
280 SE	108 2/8	3,270	192 9/8	56 6/8	71 2/8
280 S	94 4/8	3,000	168 7/8	51 3/8	69 3/8
300 SEL	114 2/8	3,470	196 8/8	55 7/8	71 1/8
300 SEL 63	114 2/8	3,600	196 8/8	55 7/8	71 1/8
600 (7 Passenger)	152 5/8	5,820	245 6/8	59 0/8	76 7/8

MAKE AND MODEL	Wheelbase (in.)	Unladen weight (lbs.)	Overall length (in.)	Overall height (in.)	Overall width (in.)
MGB Mk II Roadster (Wire Wheel)	91	2,920	153 1/8	49 3/8	59 3/4
MGB GT Mk II Coupe	91	2,190	153 1/8	49 5/8	59 3/4
Midlet Mk III	80	512	137 6/8	48 6/8	54 3/8
MGC Roadster (Wire Wheel)	91	2,445	153 1/8	50 2/8	59 3/4
MGC GT Coupe	91	2,595	153 1/8	50 5/8	59 3/4
NSU 1000 C	88	1,452	150	53 5/8	58 1/8
TT	88	1,452	150	53 5/8	58 1/8
1200 C	96	1,587	175	54 7/8	58 3/8
RD 80 (Dual Wankel)	112 6/8	2,668	188	55 6/8	69
OPEL Kadett 2 door Sedan	95 1/8	1,691	161 6/8	53	61 9/8
Kadett Deluxe Sport Coupe	95 1/8	1,730	164 6/8	53 1/8	61 9/8
GM Rally Kadett Sport Coupe	95 1/8	1,783	164 6/8	52 8/8	61 9/8
Kadett + van Wagon	95 1/8	1,808	164 4/8	52 9/8	61 9/8
Kadett Deluxe Sport Sedan	95 1/8	1,730	164 6/8	53 1/8	61 9/8
GT	95 7/8	1,888	161 9/8	47 7/8	62 2/8
PEUGEOT 404 Sedan	104 3/8	2,295	175	57 1/8	64
404 Station Wagon	111 8/8	2,425	180	58 7/8	64
PORSCHE 912	87 5/8	2,095	163 9/8	51 9/8	63 4/8
911 T	89 5/8	2,250	163 9/8	51 9/8	62 4/8
911 S	89 5/8	2,195	163 9/8	51 9/8	62 4/8
RENAULT 10	109	1,825	167 5/8	55 5/8	60
16	105 8/8	2,249	170	57 3/8	64 9/8
ROVER P5B Silver Shadow	119 5/8	4,636	203 5/8	59 7/8	71
ROVER 2000 Automatic	110 3/4	2,267	178 5/8	54 7/8	66
2000 TC	101 4/8	2,810	178 5/8	54 7/8	66
SAAB 99 Sedan	97 3/8	2,435	172	57 1/8	66 1/8
900 V4 Sedan	98	2,000	165	58	62
Station Wagon	98	2,050	169	58	62
Senneff II	85 1/8	1,520	149	46	57
SIMCA 1118 GL GLS 2 door S	87 4/8	1,795	149 5/8	53 4/8	58 5/8
1204 LS 2 door Sedan	99 2/8	1,990	153 3/8	55 7/8	62 5/8
1204 GLS 2 door Wagon	99 2/8	2,175	155 1/8	57 7/8	62 5/8
SUBARU 300	70 9/8	1,886	138	53 1/8	51 7/8
SUNBEAM Arrow Sedan	98 5/8	2,087	169 2/8	54 7/8	63 5/8
Alpine Coupe	92 5/8	2,276	174 5/8	57	64 7/8
Alpine GT	92 5/8	2,373	174 5/8	53 5/8	64 7/8
TOYOTA Corolla Sedan	90	1,617	152 8/8	54 3/8	58 5/8
Corona Sedan	95 3/8	2,290	162 4/8	55 9/8	61
Corona Hardtop	95 3/8	2,260	162 4/8	54	61 6/8
Crown Sedan	105 9/8	2,890	183 7/8	56 9/8	66 5/8
Crown Station Wagon	105 9/8	2,967	184 6/8	57 7/8	66 5/8
Land Cruiser 5th Top	97 0/8	3,226	174	76 8/8	65 2/8
Land Cruiser Station Wagon	106 3/4	3,840	174	61	68
TRIUMPH TR 6 -	88	2,156	155	50	58 1/8
GT 6	83	1,904	147	47	57
Spitfire Mk III	83	1,657	147	47 5/8	57
VOLKSWAGEN 1600 Sedan	94 5/8	1,808	158 6/8	52 1/8	61
Karmann Ghia Coupe	94 5/8	1,816	161	52 4/8	61 3/8
1600 Fastback	94 5/8	2,116	166 3/8	57 9/8	62 2/8
1600 Squareback	94 5/8	2,116	166 2/8	57 9/8	62 2/8
VOLVO 164 4 door Sedan	102 3/8	2,928	181 6/8	56 7/8	67 3/8
164 4 door Sedan	102 4/8	2,691	182 7/8	56 7/8	67 1/8
142 4 door Sedan	102 4/8	2,549	182 7/8	56 7/8	67 1/8
145 4 door Station Wagon	102 4/8	2,727	182 7/8	56 7/8	67 1/8
1800S Sport Coupe	96 5/8	2,436	173 3/8	56 5/8	61

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)	Unladen weight (lbs.)	Overall length (in.)	Overall height (in.)	Overall width (in.)
ALFA ROMEO Giulia Super	99	2,204	163	56	61
Spider Duotta	89	2,070	167	51	64
Giulia Sprint GT Veloce	93	2,094	161	52	62
ASTON MARTIN DBS	102.75	3,500	180.5	52.25	72
AUSTIN America	93.5	1,852	146.75	53	60.38
AUSTIN HEALEY Sprite Mk IV	80	1,512	137.6	48.63	54.88
BENTLEY T Series	119.5	4,635	203.5	59.75	71
BMW 1600 Sedan	96.4	2,073	166.5	55	62.5
2002 Sedan	96.4	2,073	168.5	55	62.5
CITROEN DS 21	123	2,855	190.5	58	70.5
10 19	123	2,855	190.5	58	70.5
DATSUN PL150 Sedan	95.3	2,017	162.2	55.1	61.4
SP1311 Convertible	89.8	1,984	155.7	51.6	58.9
SR1311 Convertible	89.8	2,006	155.7	51.6	58.9
PL150 Station Wagon	95.3	2,083	163.2	55.1	61.4
ENGLISH FORD Cortina 4 door II	98	2,038	168.5	54.7	64.9
Cortina 4 door Station Wagon	98	2,154	169.5	54.7	64.9
Cortina GT 2 door	98	2,028	168.5	54.7	64.9
FERRARI 330 GT	104.2	3,040	189.4	52	69
FIAT 850 Coupe	79.75	1,535	142.5	51.2	59.1
850 Sedan	79.8	1,427	140.8	54.5	56.1
850 Spider	79.8	1,540	148.9	48	59
124 Coupe	95.27	2,020	162	51.3	65.7
124 Sedan	95.27	1,825	158.7	55.9	65
124 Spider	89.76	2,010	156.3	49.2	63.5
124 Station Wagon	95.27	1,945	158.7	56.7	65
HONDA 600	78.8	1,213	122.1	52.2	51
JAGUAR XK E Coupe and Roadster	96	2,464	175.25	48	65.25
XK E 2-2 Coupe	105	2,744	184.4	50.1	65.25
LANCIA Fulvia GT Sedan	98	2,170	162	52	62
Fulvia Coupe Rally	92	2,039	156	51	61
Fulvia Sport Zagato	92	1,990	161	47	62
Fulvia Coupe M F	92	1,815	156	51	61
Flavia Sedan	105	2,600	182	60	64
LOTUS Elan Drophead and Coupé	84	1,340	145.25	45	56
Elan 2	96	2,000	168	47	63.5
Europa	91	1,250	158	43	64.5
MASERATI Quattroporte	108.2	3,196	183.5	68	70.8
GH bi	110.3	3,180.7	185.6	70.8	70.8
MERCEDES BENZ 220	108.3	2,890	184.5	56.7	69.7
220 D	108.3	2,000	184.5	56.7	69.7
230	108.3	2,945	184.5	56.7	69.7
250	108.3	3,000	184.5	56.7	69.7
280 S	108.27	3,220	192.91	56.69	71.26
280 SE	108.27	3,270	192.91	56.69	71.26
280 SL	104.49	3,000	168.70	51.38	69.3
300 SE	112.20	3,570	196.85	55.71	71.26
600 (7 Passenger)	153.54	8,201	245.67	59.06	76.77

MAKE AND MODEL	Wheelbase (in.)	Unladen weight (lbs.)	Overall length (in.)	Overall height (in.)	Overall width (in.)
MGB Roadster (wire wheels)	91	1,970	153	49.5	59.94
MGB GT Coupe	91	2,190	153	49.5	59.94
Midget Mk III	80	1,512	137.63	48.63	54.88
NSU Sport Coupe	78.75	1,061	123.8	53.75	59.8
1000	88	1,367	150	53.5	58.5
TT	88	1,411	150	53.5	58.5
TTS	88	1,435	150	54.5	58.6
110	96	1,587	157.5	54.7	58.5
1200 C	96	1,587	157.5	54.7	58.5
Spider (Wankel)	79.5	1,510	141	49	59.75
RO Bi (Dual Wankel)	112.6	2,668	188	55.6	69
OPEL Kadett 2 door Sedan	95.1	1,691	161.6	53	61.9
Kadett Deluxe Sport Coupe	95.1	1,716	164.6	53.1	61.9
GM Rallye Kadett Sport Coupé	95.1	1,991	164.6	52 E	61.9
Kadett Deluxe Wagon	95.1	1,808	164.4	53.9	61.9
Kadett Deluxe Sport Sedan	95.1	1,730	164.6	53	61.9
Kadett LS Sport Coupe	95.1	1,744	164.6	53.3	61.9
PEUGEOT 404 Sedan	104.3	2,295	175	57.1	64
404 Station Wagon	111.8	2,425	180	58.75	64
PORSCHE 911	87.1	2,376	163.9	51.97	63.4
911 L	87.1	2,270	163.9	51.97	63.4
912	87.1	2,134	163.9	51.97	63.4
RENAULT 10	89	1,825	167.5	55.5	60
ROLLS ROYCE Silver Shadow	119.5	4,636	203.5	59.75	71
ROVER 2000 Automatic	103.4	2,767	178.5	54.75	66
2000 TC	103.4	2,810	178.5	54.75	66
SAAB Station Wagon	98	2,050	168	58	62
Sedan 96	98	1,820	164	58	62
SAAB Sedan V 4	98	1,931	164	58	62
Station Wagon V 4	98	2,050	168	58	62
Sonett V 4	85	1,520	149	46	57
SIMCA 1000, Deluxe GLS	87.4	1,605	149.5	52.4	58.5
SUNBEAM Arrow Sedan	98.5	2,095	169.5	56	63.5
Arrow Wagon	98.5	2,193	172	56	63.5
Alpine V	86	1,288	156	51.5	60.5
TOYOTA Corona Sedan	95.3	2,760	162.4	55.9	61
Corona Hardtop	95.3	2,760	162.4	54.1	61.6
Crown Sedan	105.9	2,965	183.7	56.9	66.5
Crown Station Wagon	105.9	3,141	184.6	57.7	66.5
Land Cruiser Soft Top	90.0	3,260	152.4	76.8	65.6
Land Cruiser Station Wagon	106.3	4,130	184.0	73.4	68.3
TRIUMPH TR 250	88	2,165	153.6	50	58
GT 6	88	1,900	145	47	57
TR 4 A	88	2,072	153.6	50	58
Spitfire	83	1,586	147	47.5	57
VOLKSWAGEN 1500 Sedan	94.5	1,808	158.7	59	61
Karmann Ghia Coupe	94.5	1,918	163	52.4	64.3
1600 Fastback	94.5	2,116	166.3	58	63.2
1600 Squareback	94.5	2,116	166.3	58	63.2
VOLVO 4 door Sedan 144 S	102.4	2,600	182.7	56.7	68.1
142 S 2 door Sedan	102.4	2,520	182.7	56.7	68.1
145 S 4 door Station Wagon	102.4	2,870	182.7	57.0	68.1
122 S 2 door Sedan	102.4	2,360	175	59.3	65.7
1800S Sports Coupe	96.5	2,460	173.3	50.5	67

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in)	Unladen weight (lbs)	Overall length (in)	Overall height (in)	Overall width (in)
ALFA ROMEO Giulia Super	99	2,204	166	56	61
Spider Duella	89	2,070	154	53	62
Giulia Sprint GT Veloce	93	2,094	161	52	62
Giulia Sprint GTA	89	1,680	162	50	63
AMPHICAR 770	82.67	2,292	170.31	59.84	60.31
ASTON MARTIN DB-6	101.75	3,250	182	53.5	66
Volante Conv	101.75	3,233	182	53.5	66
AUSTIN Cooper S	80	1,400	120.25	53	55.5
Austin Mini Make Tourer	80	1,204	120	56	51.5
AUSTIN HEALEY 3000 Mk III	92	2,380	157.5	50	60.5
Sp 16 Mk IV	80	1,512	136	49.75	53
BENTLEY T Series	119.5	4,625	203.5	59.75	71
BMW 1600 Sedan	96.4	2,073	166.5	55	62.5
1800 Sedan	100.5	2,359	177.2	57.1	67.3
2000 CS Coupe	100	2,530	178	54.2	66
CITROEN ID 19	123	2,668	190.5	58	70.5
DS 19	123	2,640	190.5	58	70.5
DS 21	123	2,855	190.5	58	70.5
DAF 44	88.6	1,460	151.6	54.3	60.6
DAISUN PL411 Sedan	93.8	1,951	157.4	56.2	58.7
PL411 Sedan	93.7	1,984	157	56.3	58.7
SPL311 Convertible	89.8	2,028	155.6	51.4	58.9
PL411 Station Wagon	93.8	2,112	157.4	56.2	58.7
PL411 Station Wagon	93.7	2,028	157	56.3	58.7
160 Patrol	86.6	3,461	148.5	78	67.9
ENGLISH FORD Anglia Deluxe	90.5	1,685	153.5	56.5	57.3
Corina Deluxe 4 door	98	1,803	168.5	54.3	62.5
Corina GT	98	1,870	168.5	54.3	62.5
Corina Lotus	98	1,857	168.5	54.3	62.5
Corina Station Wagon	98	1,878	168.5	54.3	62.5
FERRARI 330 GT	104.2	3,040	189.4	52	69
330 GT5	94.4	2,640	"	"	"
330 GTC	94.4	2,867	"	"	"
275 G1B 4	94.4	2,425	"	"	"
365 California	104.2	2,900	"	"	"
FIAT 600 D Sedan	78.5	1,334	131.5	55.3	54.3
850 Coupe	79.75	1,588	142.5	51.2	59.1
1100 R Sedan	92.1	1,874	156.1	54.5	57.4
1100 R Station Wagon	92.1	1,962	153.8	57.5	57.5
124 Sedan	95.3	1,885	158.7	53.7	64
1500 Spider	92.1	2,128	160.87	51	59.8
JAGUAR XK E Coupe and Roadster	96	2,520	175.25	48	65.25
XK E 2+2 Coupe	105	2,772	184.4	50.1	65.25
420 Sedan	107.4	3,438	187.75	54.5	66.75
420 G Sedan	120	3,920	202	54.5	76
340 Sedan	107.4	3,080	180.75	57.5	66.75
LOTUS Elan Drophead Coup	84	1,340	145.25	45	56
Super Seven	88	930	132	44.7	55
MASERATI Sebring 2+2	94	"	176	51	64
Miller	94	"	177	51	64

MAKE AND MODEL	Wheelbase (in)	Unladen weight (lbs)	Overall length (in)	Overall height (in)	Overall width (in)
MERCEDES BENZ 200	106.30	2,811	186.27	58.86	70.67
200 D	106.30	2,921	186.27	58.86	70.67
230	106.30	2,877	186.27	58.86	70.67
230 S	108.27	2,975	191.93	59.06	70.67
230 SL	94.5	2,855	168.7	51.3	69.2
250 S	108.3	3,175	192.9	56.7	71.3
250 SE	108.3	3,263	192.9	56.7	71.3
300 SE Automatic Coupe	108.3	3,672	192.1	54.9	72.7
300 SEL	112.2	3,615	196.9	55.7	71.3
600 Pullman	153.5	5,820	245.66	59.4	76.8
MGB Roadster (wire wheels)	91	1,920	153.19	49.75	59.94
MGB GT Coupe	91	2,190	153.19	49.75	59.94
Maget Mk III	80	1,512	136	49.75	53
Sports Sedan 2 door	93.5	1,806	146.75	53	60.38
MORGAN 4/4	96	1,456	144	52	56
Plus 4 Plus GT	96	1,850	144	51	61
NSU Sport (Prinz) Coupe	78.75	1,106	123.8	53.75	59.8
Prinz 4	80.3	1,245	135.5	53.5	58.5
Prinz 1000	88	1,367	150	53.5	58.5
Spider (Wankel)	79.5	1,510	141	49	59.75
Type 110	96	1,587	157.5	54.7	58.5
1000 TT	88	1,411	150	53.5	58.5
OPEL Kadett Sedan	95.1	1,548	161.6	53.2	61.9
Kadett Coupe	95.1	1,592	164.6	53.9	61.9
PEUGEOT 403 Sedan	105	2,330	176	59.25	66.9
404 Sedan	104.3	2,359	174	57.1	64
404 Station Wagon	111.8	2,530	180	58.1	64
PORSCHE 911	87.1	2,376	63.9	51.97	63.4
911 S	87.1	2,270	163.9	51.97	63.4
912	87.1	2,354	163.9	51.97	63.4
RENAULT 10	89	1,775	167.5	55.5	60
Dauphine	89	1,463	157	57	60
Caravelle Convertible/Hardi	89	1,786	170	53	62
ROLLS ROYCE Silver Shadow	119.5	4,636	203.5	59.75	71
ROVER 2000	103.4	2,767	178.5	54.75	66.5
2000 TC	103.4	2,810	178.5	54.75	66.5
3 Litre Mark II and Mark III	110.5	3,654	186.5	59.25	70
3 Litre Coupe	110.5	3,741	186.5	57.25	70
Land Rover 88 (Diesel Optic)	88	3,228	142.4	77.5	66
Land Rover 100 (Diesel Optic)	109	3,745	175	81	66
Land Rover 109	109	3,912	175	81	66
SAAB Station Wagon	98	2,050	168	58	62
Sedan 96	98	1,820	164	58	62
Sedan V 4	98	1,930	164	58	62
Station Wagon V 4	98	2,050	168	58	62
SIMCA 1000 Deluxe GLS	87.4	1,605	149.5	52.4	58.5
Berlione Coupe	87.6	1,750	155.6	49.2	60
SUNBEAM Arrow	98.5	2,048	169.5	56	63.5
Alpine V	86	2,188	156	51.5	60.5
Tiger V 8	86	2,525	156	51.5	60.5
Imp Mark II	82	1,569	139	54.5	60.25

Passenger Car Specifications

MAKE AND MODEL	Wheelbase (in.)		Overall length (in.)	Overall height (in.)	Overall width (in.)
	Front	Rear			
TOYOTA Corona	95.3	113.9	161.8	55.9	61
Crown Sedan	105.9	128.2	182.5	57.5	66.7
Crown Station Wagon	105.9	128.5	184.6	57.9	66.7
Land Cruiser Soft Top	90	126.0	152.4	76.8	65.6
TRIUMPH TR-4	88	120.7	156	50	57.5
GT 6	88	117.9	145	47	57
Spitfire	83	114.7	145	47.5	57
2000	106	124.8	174	56	65
VOLKSWAGEN 1600 Sedan	94.5	117.6	160.6	59.1	60.6
Karmann Ghia Coupe	94.5	118.5	163	52.4	64.3
1600 Fastback	94.5	120.8	166.3	58.1	63.2
1600 Squareback	94.5	120.9	166.3	58.1	63.2
VOLVO 4 door Sedan 144 S	102.4	126.0	182.7	56.7	68.1
2 door Sedan 172 S	102.4	121.9	175	59.25	63.75
1800 S Sports Coupe	96.5	123.2	173.3	50.5	67
4 door Station Wagon 122	102.4	124.7	176.5	60.25	63.75

Passenger Car Specifications

	Wheelbase (in.)	Unladen weight (lbs.)	Overall length (in.)	Overall height (in.)	Overall width (in.)
ALFA ROMEO Giulia T.E.	99	2,204	166	56	61
Giulia Spider	89	1,870	154	53	62
Giulia Sprint GT	93	2,094	161	52	62
Giulia Sprint Speciale	89	2,094	162	50	65
2600 Spider	98	2,530	172	52	65
2600 Sprint	101	2,550	172	52	67
AMPHICAR 770	82.67	2,292	170.31	59.84	60.31
ASTON MARTIN DB 5	98	2,233	180	53	66
Volante Conv.	98	2,233	180	53	66
DB 6	102	2,250	182	54.5	66
AUSTIN B50 Export	80	1,294	120.25	53	55.5
Austin Cooper S	80	1,435	120.25	53	55.5
Austin Mini-Moke Tourer	80	1,204	120	56	51.5
AUSTIN HEALEY 2000 Mk. III	92	2,386	157.5	50	60.5
Sprite Mk. III	80	1,566	116	49.75	53
BENTLEY T Series	119.5	4,636	203.5	59.75	71
Bmw 1800 Sedan	100.5	2,359	172.2	57.1	67.3
2000 CS Coupe	100	2,530	178	54.2	66
CITROEN ID 19	72	2,668	190.5	58	70.5
DS 19	72	2,640	190.5	58	70.5
DS 21	123	2,855	190.5	58	70.5
Dat American Special	81	460	142	54.3	57
DAISUN PL 411 Sedan	93.8	951	157.4	56.2	58.7
1600 Convertible	89.8	2,028	155.6	51.4	58.9
Station Wagon	92.8	2,112	157.4	56.2	58.7
Patria	86.6	2,392	148.5	78	66.5
ENGLISH FORD Anglia Deluxe	90.5	1,685	153.5	56.5	57.3
Corina Deluxe 4 door	98	1,803	165.5	54.3	62.5
Corina GT	98	1,870	168.5	54.3	62.5
Corina Lotus	98	1,857	168.3	53.4	62.5
Corina Station Wagon	98	1,878	168.5	54.3	62.5
FERRARI 275 GTB	94.5	2,425	172	53	66.5
330 GT	104.7	3,040	189.4	52	69
FIAT 600 D Sedan	78.5	1,131	103.5	55.32	54.3
1100 D Sedan	92	975	154	57.8	57.4
1100 D Station Wagon	92.1	2,050	154.1	58.5	57.5
1500 Spider	92.1	2,112	160.82	51	59.8
HILMAN Super Minx IV	101	2,357	165	58.3	63.75
Husky	86	2,061	149.5	59.5	60.5
HUMBER Super Snake V Imper	110	3,358	188	61	70
ISO Bivalta	105.5	2,970	185.5	52.25	69
JAGUAR 3.8 Mark II Sedan	107.4	3,126	180.75	57.5	66.75
3.8 S Sedan	107.4	3,440	187.75	54.5	66.75
XK E Coupe and Roadster	96	2,520	175.25	48	65.25
4.2 Sedan	120	3,920	202	54.5	76
LANCIA Flaminia GT 3 C	99.2	2,908	177.4	50.4	65.5
LOTUS Elan S 2 Coupe	84	1,290	145.25	45	56
Super Seven	88	950	132	44.7	55
MATREBATI 2500 GT Coupe	102.3	2,800	184	51	69
4200 Fiva Sedan	106.3	3,200	197	53.5	66.5
MERCEDES BENZ 200	106.3	2,811	186.22	58.86	70.67
200 D	106.3	2,971	186.22	58.86	70.67
270 SE	108.7	3,336	192.1	55.9	72.7
300	106.3	2,877	186.22	58.86	70.67
300 S	108.27	2,975	191.93	59.06	70.67
300 S	94.5	2,895	168.7	51.3	69.2
300 SE Automatic Coupe	108.3	3,672	192.1	54.9	72.7
6.0 Pullman	153.5	5,799	245.66	59.4	76.8

	Wheelbase (in.)	Unladen weight (lbs.)	Overall length (in.)	Overall height (in.)	Overall width (in.)
MG B Roadster (wire wheels)	91	1,920	153.19	49.75	59.94
Midget Mk. II	80	1,566	136	49.75	57
Sports Sedan 2 door	193.5	1,806	146.75	53	60.38
MORGAN 4.4	96	1,456	144	52	56
Plus 4 Plus GT	96	1,850	144	51	61
NSU Sport (Prinz) Coupe	78.75	1,106	123.8	52.75	59.8
Prinz 4	80.3	1,245	135.5	53.5	58.5
Prinz 1000	88	1,367	150	53.5	58.5
Spider (Wankel)	79.5	1,510	14	49	59.75
Type 110	96	1,587	157.5	54.7	58.5
OPel Kadett Sedan	95.1	1,534	161.6	53.2	61.9
Kadett Coupe	95.1	1,587	164	53.9	61.9
PEUGEOT 403 Sedan	105	2,300	176	59.25	66
404 Sedan	104.3	2,359	174	57.1	64
404 Station Wagon	111.8	2,530	180	58.3	64
PORSCHE 911	87.1	2,376	164	51.97	63.4
912	87.1	2,134	164	51.97	63.4
PRINCESS 4 litre R Sedan	110	3,584	188	59	68.5
RENAULT Dauphine	89	1,463	157	57	60
Dauphine Automatic	89	1,475	157	57	60
R 8 1100	89	1,676	158.5	56	58.5
R 8 Gardin	89	1,753	157.5	54	58.5
R 8 Automatic (1950)	89	1,686	158.5	56	58.5
Corvette Convertible Hardtop	89	1,786	170	53	62
ROLLS ROYCE Silver Shadow	119.5	4,636	203.5	59.75	71
ROVER 2000	103.4	2,767	178.5	54.75	66.5
3 Litre Mark II and Mark III	110.5	3,654	186.5	59.25	70
3 Litre Coupe	110.5	3,741	186.5	57.25	70
Land Rover 88	88	2,228	142.4	77.5	66
Land Rover 109	109	3,445	175	81	66
SAAB Station Wagon	98	2,050	168	58	62
Sedan 4 Speed	98	1,820	164	58	62
Monte Carlo 850	98	1,960	164	58	62
Special Sedan	98	1,850	164	58	62
SIMCA 1000 Deluxe GLS	87.4	1,709	149.5	52.4	58.5
Berline Coupe	87.6	1,750	155.6	49.2	60
SUNBEAM 1725 Deluxe Sedan	96	2,700	161.5	58	66.75
Alpine V	86	2,211	158.25	51.5	60.5
Tiger V 8	86	2,525	155.25	51.5	60.5
Imp Mark II	82	1,540	145	54.5	60.25
TOYOTA Corona	193.3	2,139	161.8	55.9	61
Crown Sedan	105.9	2,789	181.5	57.5	66.6
Crown Station Wagon	105.9	2,970	184.6	57.9	66.6
Land Cruiser Soft Top	90.2	3,260	152.4	76.8	65.6
TRIUMPH TR 4	88	2,072	156	50	57.5
1200 Sedan and Convertible	91.5	1,820	153	52	60
Sports Six	91.5	2,044	153	52	60
Spitfire	83	1,474	145	47.5	57
2000	106	2,487	174	56	65
VOIKSWAGEN 1300 Sedan	94.5	2,719	160.2	57.1	60.6
Karmann Ghia Coupe	94.5	1,830	163	57.4	64.3
1600 Fastback	94.5	2,028	166.3	58.1	61.2
1600 Squareback	94.5	2,095	166.3	58.1	63.2
VOLVO 4 door Sedan 122 S	102.4	2,260	175	59.25	63.75
2 door Sedan 122 S	102.4	2,195	175	59.25	63.75
1800 S Sports Coupe	96.5	2,370	173.3	56.5	67
4 door Station Wagon 122 S	102.4	2,475	176.5	60.25	63.75

MAKE/MODEL CODES

Codes represent an update of the MDAI Editing
Manual to include the 1978 Model Year.

COUNTRY, CORPORATION, DIVISION (abc)

1	<u>USA</u>	4	<u>England</u>
11	General Motors Corp.	419	GM Vauxhall*
111	Buick	42	Ford England*
112	Cadillac	434	Plymouth (Cricket)*
113	Chevrolet	45	British Leyland
114	Oldsmobile	451	Austin
115	Pontiac	452	Austin Healy
116	GMC Truck and Coach	453	MG
117	GMC Electromotive	454	Morris
12	Ford Motor Co.	455	Jaguar
121	Ford	456	Triumph
122	Lincoln-Mercury	458	Rover
13	Chrysler Corp.	46	Rootes
131	Chrysler	481	Aston Martin
132	Dodge	482	Lotus Elan
133	Imperial	484	Rolls Royce
134	Plymouth	486	Jensen, Jensen-Healey
135	DeSoto	489	Norton (Motorcycle)
14	American Motors Corp.	5	<u>France</u>
141	American Motors	531	Chrysler (Simca)*
15	Other USA Corporations	551	Citroen
151	Checker	561	Renault
152	Kaiser-Jeep, AMC-Jeep	571	Peugeot
153	International	6	<u>Germany</u>
154	Studebaker/Avanti	618	GM (Opel)*
155	Harley-Davidson	622	Ford (Capri)*
156	General Vehicles Corp. (Bricklin)	651	Mercedes Benz
16	USA Truck Corp.	661	Volkswagen
160	USA Truck Corp. Unknown	662	Porsche
161	Brockway	671	BMW
162	Diamond-Reo	681	Audi
163	FWD	7	<u>Italy</u>
164	Kenworth	722	Ford of Italy*
165	Mack	751	Alfa-Romeo
166	Peterbilt	761	Fiat
167	White (Autocar, Freight Liner)	771	Ferrari
168	Other USA Truck Corp.	781	Maserati
170	Unknown/Other USA Manufacturer of Special Purpose Vehicle	782	Lancia
171	Flexible	784	Lamborghini
172	Freuhauf	8	<u>Japan</u>
191	Male Pedestrian/Bicyclist	813	Chevrolet-Isuzu (LUV Pickup)*
192	Female Pedestrian/Bicyclist	832	Dodge-Mitsubishi (Colt)*
2	<u>Canada</u>	851	Toyo (Mazda)
21	GM Canada*	861	Nissan (Datsun)
213	Chevrolet*	871	Toyota
214	Oldsmobile*	881	Honda
215	Pontiac*	882	Fuji Heavy Ind. (Subaru)
22	Ford Canada*	883	Suzuki
222	Lincoln-Mercury*	884	Kawasaki
260	Unknown Canadian Truck Corp.	885	Yamaha
268	Other Canadian Truck Corp.	9	<u>Other Foreign</u>
3	<u>Australia</u>	951	Saab (Sweden)
31	GM (Holden)*	952	Volvo (Sweden)
-----		000	Unknown, Missing Data

*Corporation codes 1-4 (b) are always the same from country to country, e.g., 12= USA/Ford and 42 = England/Ford. Codes 5-9 have different definitions in each country.

MODEL TYPE (de)Passenger Cars

01 Intermediate (GM A Body)
 02 Standard/Full Size (B Body)
 03 Luxury (C Body) or Limousine (D Body)
 04 Mini Specialty (Mustang II)
 05 Personal Luxury (F Body)
 06 Specialty/Pony (F Body)
 07 Specialty Intermediate (A SP Body)
 08 Compact (X Body & Y Body)
 09 Sub-compact/Mini-Imported (VW)
 10 Super Sport (Corvette)
 17 Pickup-Car (Ranchero)
 18 Sub-compact/Mini-USA (H Body)
 19 Foreign Sports Cars (MG)
 20 Unknown Automobile Body

<u>Size</u>	<u>Standard</u>	<u>Specialty</u>	<u>Sports</u>
Mini	09, 18	04	19
Compact	08	06	10
Intermediate	01, 17	07	--
Standard	02	05	--
Luxury/Limo-	03	--	--

Multipurpose Passenger Vehicle

14 Utility (Jeep, Bronco)
 15 Carryall/Panel Truck
 16 Pickup Truck w. Canopy/Shell Cover
 17 Pickup-Car (Ranchero)
 17 Pickup-Car w. Canopy/Shell Cover
 21 Motor Home
 22 Pickup-Truck w. Slide-in Camper
 23 Pickup-Car w. Slide-in Camper
 31 Chassis-Mounted Camper

Trucks

11 Small Van (Econoline)
 12 Pickup
 13 Unknown Light Truck (<1-1/2 Ton)
 15 Carryall/Panel Truck
 16 Pickup Truck w. Canopy/Shell Cover
 22 Pickup Truck w. Slide-in Camper
 30 Unknown Truck Type
 31 Chassis-Mounted Camper
 33 Delivery Van (Walk-in)
 34 Straight Truck
 35 Truck-Tractor
 36 Chassis-Cab
 37 Unknown Heavy Truck (>1-1/2 Ton)
 38 Tractor + Semi-Trailer (Semi)
 39 Truck (or Semi) + Full Trailer(s)

Buses

40 Unknown Bus Type
 41 School Bus
 42 Inter City (between)
 43 Intra City (within)
 44 Streetcar (on tracks)

Motorcycles

50 Unknown Motorcycle Type
 51 1-75cc
 52 76-125cc
 53 126-250cc
 54 251-500cc
 55 501-750cc
 56 751+cc
 57 3-wheels (or with sidecar)

Special Purpose Vehicles

60 Unknown/Other Special Vehicle
 61 Snowmobile
 62 ATV, All Terrain Vehicles
 63 Amphibious Vehicle
 64 Farm Vehicles
 65 Construction Vehicles
 66 Trailer-Private (Camper)
 67 Trailer-Commercial (Cargo)
 68 Train (Cars)
 69 Locomotive, Switcher

Miscellaneous Model Types

70 Pedestrian
 71 Bicyclist, Other Pedalcycle
 72 Pedestrian Conveyance
 (e.g. Person riding animal
 or in cart)
 98 Other Model Type
 00 Unknown Model Type

VEHICLE MAKE MODEL (ABCDE): 4/76

AMERICAN MOTORS*

14101 Classic, Rebel, Matador
 14102 Ambassador
 14104 Pacer
 14106 Marlin, Javelin, Javelin AMX (71-)
 14108 American, Hornet, Sportabout, Rouge, Concord
 14110 AMX (to 70)
 14118 Gremlin

KAISER MOTORS (JEEP) - AMC

15201 Wagoneer
 15214 Jeep, Jeepster, CJ-5, CJ-6, Commando, CJ-7, Cherokee
 15212 Pickup

CHRYSLER CORPORATION (1960 to-date)

13101 LeBaron (77-)
 13102 Newport, Chrysler 300, New Yorker, Town & Country (66-)
 Windsor (60, 61), Saratoga (60)
 13107 Cordoba

Dodge

13201 Coronet (65-76), Super Bee (67-69), Dart (62), Polara (62-64),
 Monaco (77-), Diplomat (77-)
 13202 Polara (60, 61), (65-74), Monaco (65-76), 880 (62-65), Dart (60, 61),
 Matador (60), Royal Monaco (75-77)
 13206 Challenger (70-74)
 13207 Charger
 13208 Dart (63-), GTS, Swinger (69-), Custom (69), Demon, Lancer (61, 62),
 Aspen
 13218 Omni
 13211 Van, Sportsman Wagon, Tradesman
 13212 Pickup, D100, D200, D300, Club Cab, Crew Cab, Upline, Sweptline
 13214 Ramcharger
 13215 Carryall
 13233 Van Walk-in, Kary Van
 13234 Straight Truck
 13235 Truck Tractor
 13238 Tractor-Trailer Combination (Semi)
 (83209) Colt

Imperial

13303 Imperial (-75), LeBaron (-75), Crown, Custom (60-63)

Plymouth

13401 Fury (62-64) (75-), Savoy (62-64), Belvedere (62-), Satellite (65-74),
 Sebring, Fury Suburban, Road Runner (-75), GTX (67-71)
 13402 Fury (-61) (65-74), Suburban (68-74), VIP (66-69), Belvedere (60, 61),
 Gran Fury (75-77), Gran Fury Suburban
 13406 Barracuda (67-74), Grand Coupe (70-71), Roadrunner (76-)
 13408 Volare, Duster (70-), Scamp (72-), Valiant, Barracuda (64-66),
 Signet (62-69)
 13418 Horizon
 13411 Van, Voyager
 13414 Trail Duster
 (43409) Cricket (71-72)
 (83409) Arrow (76-)

DeSoto

13502 DeSoto (61), Fireflite (60), Adventurer (60)

FORD MOTOR COMPANYFord

12101 Fairlane, Torino, Cobra, Falcon (70 1/2-71), LTD II (77-),
LTD II Brougham (77-)
12102 Custom (-74), Galaxie (-74), XL, LTD, Country Squire, Ranch Wagon,
Country Sedan
12104 Mustang II, Ghia, Mach I (74-), Cobra II (76-)
12105 Thunderbird (-76), Landau
12106 Mustang (-73), Mach I (-73), Grande, Boss, Granada
12107 Elite (75-), Thunderbird (77-)
12108 Falcon (to 70), Maverick, Futura, Grabber, Fairmont
12111 Econoline, E100, E200, E300, Station Bus, Club Wagon
12112 Pickup, F100 to F350
12114 Bronco
12117 Ranchero
12118 Pinto
12133 Van Walk-in (P Series), Parcel Delivery)
12134 Straight Truck (C, F, L Series 500 and over)
12135 Truck-Tractor (C Series, L Series, W Series)
12138 Tractor-Trailer Combinations (Semi)
12141 School Bus (B Series)
(62109) Fiesta
(82112) Courier

Lincoln-Mercury

12201 Comet (67-69), Calliente (66-68), Montego (68-), Voyager, Villager,
Cyclone (67-), Cougar (77-)
12202 Mercury Monterey, Montclair, Park Lane, Marauder, Marquis, Colony Park
12203 Lincoln, Continental
12205 Continental Mark III, Mark IV, Mark V
12206 Cougar (67-73), Monarch, Versailles (77-)
12207 Cougar (74-76)
12208 Comet (63-66, 71-77), Zephyr
12218 Bobcat (75-)
(62209) Capri (Germany), Capri II

FORD OF CANADA, LTD.Lincoln-Mercury

22202 Meteor
22218 Mercury Bobcat (-74)

GENERAL MOTORS CORPORATIONBuick

11101 Special (64-), Skylark (-74), GS, Sportwagon, Century (-77), Regal (-77),
Gran Sport (-77), LeSabre (77-), Estate Wagon (77-)
11102 LeSabre (-76), Wildcat, Centurion, Electra 225 (77-)
11103 Electra 225 (-76), Estate Wagon (-76)
11104 Skyhawk
11105 Riviera (-76)
11107 Riviera (77-)
11108 Special (to 63), Apollo (-75), Skylark (75-), Century (78-), Regal (78)
(61809) Opel Kadett, 1900, Rallye, Luxus, Manta
(61819) Opel GT
(81109) Isuzu Opel (76-)

Cadillac

11203 Calais, DeVille, Fleetwood 60 Special, Brougham, Fleetwood 75, Limousine
 11205 Eldorado
 11207 SeVille

Chevrolet

11301 Chevelle, Malibu, Nomad, Greenbrier, Laguna, Laguna S-3 (74-), Impala
 (77-), Caprice (77-)
 11302 Biscayne, Bel Air (-75), Impala (-76), Caprice (-76), Brookwood,
 Townsman, Kingswood, Chevrolet Wagon, Estate Wagon (-76)
 11304 Monza 2+2 (75-), Monza Town Coupe (75-)
 11306 Camaro, Monte Carlo (78-)
 11307 Monte Carlo (-77)
 11308 Chevy II, Nova, Corvair, Monza (-69), Nova Cabriolet (75-), Malibu (78-)
 11310 Corvette, Sting Ray
 11311 Van, Sport Van, Beauville
 11312 Pickup, Cheyenne
 11314 Blazer
 11315 Carryall, Suburban
 11317 ElCamino
 11318 Vega, Cosworth Vega, Chevette
 11333 Van Walk-in, Step-Van, High Cube Van
 11334 Straight Truck
 11335 Truck-Tractor
 11338 Tractor-Trailer Combination (Semi)
 (S1812) Chevrolet-Isuzu LUV Pickup

Oldsmobile

11401 F-85 (64-72), Cutlass (-77), Vista-Cruiser (73-), 442, Delta 88 (77-),
 Custom Cruiser (77-)
 11402 Delmont 88, Delta 88 (-76), Starfire, Rocket 88, 88, Jetstar, Dynamic 88,
 Jetstar 88, Royal, Vista Cruiser (64-72), 98, (77-)
 11403 98 (-76), Custom Cruiser (-76)
 11404 Starfire (75-)
 11405 Toronado, Toronado Brougham (74-)
 11408 F-85 (-63), Omega, Cutlass (78-)

Pontiac

11501 Tempest (64-), LeMans (-77), LeMans Safari, GTO (-74), Safari (-69),
 Grand Am (-75), Catalina (77-), Bonneville (77-), Grand Safari (77-)
 11502 Catalina (-76), Ventura (-69), Executive, Bonneville (-76), Grandville
 (-74), Grand Prix (-68), Brougham, Star Chief, Chieftain
 11503 Safari (71-76), Grand Safari (-76), Grandville (75-76)
 11506 Firebird, Esprit, Formula, Trans Am, Grand Prix (78-)
 11507 Grand Prix (69-77)
 11508 Tempest (-63), Ventura (71-), Ventura GTO (74), Ventura II, LeMans (78-)
 11518 Astre, Sunbird, Astre Safari

GMC Truck and Coach

11611 Sportvan, Vandura, Rally Wagon, Rally STX
 11612 Pick-up, Crew Cab
 11614 Jimmy
 11615 Carryall, Suburban
 11617 GMC Sprint
 11621 GMC Motor Home
 11633 Van Walk-in, Value-Van
 11634 Straight Truck
 11635 Truck-Tractor
 11638 Tractor-Trailer Combination (Semi)

GENERAL MOTORS OF CANADA LTD

Chevrolet

21501 Chevelle, Chevrolet, Acadian
 21502 Biscayne, Bel Air

Oldsmobile

21401 Oldsmobile

Pontiac

21501 Beaumont
 21502 Pontiac, Parisienne (-70), Grand Parisienne (-69),
 Parisienne Brougham (71-), Laurentian
 21503 Safari
 21518 Astre, Acadian (76-)

CHEVROLET

15102 Checker, Marathon

INTERNATIONAL HARVESTER

15312 Pickup, Travelette, Terra
 15314 Scout, Traveler
 15315 Travelall
 15333 Van Walk-in
 15334 Straight Truck
 15335 Truck-Tractor
 15338 Tractor-Trailer Combination (Semi)
 15341 School Bus

STUDEBAKER

15405 Avanti II
 15408 Lark

HARLEY-DAVIDSON

1555- Motorcycle

GENERAL VEHICLES CORPORATION

15610 Bricklin

IMPORTED VEHICLES - BY CODE (4/76)

Australia

31708 Holden

England

41908 Vauxhall
42209 Ford Anglia, Cortina, Escort, Corsair
42401 Ford Zephyr, Zodiac
43409 Plymouth Cricket (71-72)
45--- British Leyland
45108 Austin Maxi, A60, 1800
45109 Austin Mini, Mini Cooper, America, 1300, Marina, 1100
45219 Austin Healy Sprite, 3000
45319 MGA, MGB, MGC, MG, Midget, MGB/GT, MGC/GT
45409 Morris Minor
45501 Jaguar XJ6, XJ12, XJ-S
45503 Jaguar 420
45510 Jaguar E Type (XKE)
45608 Triumph 2000
45609 Triumph Herald
45619 Triumph Spitfire, GT6, TR3, TR4, TR250, TR6, TR7, GT6+, Stag
45808 Rover 2000, 3500
45814 Land Rover
46--- Rootes
46109 Hillman Imp, Avenger
46209 Singer
46309 Sunbeam Alpine (69-), Rapier
46319 Sunbeam Alpine (-67), Tiger
48107 Aston Martin LaGonda
48110 Aston Martin DB5, DB6, DBS
48219 Lotus Elan, Elite, +2s, Super 7, Europa, Eclat, Esprit, Sprint
48319 Morgan
48403 Rolls Royce (Limo)
48405 Rolls Royce (Shadow), Corniche, Camargue
48610 Jensen, Interceptor
48619 Jensen-Healey
4895- Norton (motorcycle)

France

53109 Simca 1204, GLS
55101 Citroen 21, ID20, DS21
55108 Citroen GS
55109 Citroen 2CV, Dyane, Ami
55107 Citroen SM
56108 Renault 16
56109 Renault 5, 8, 10, 12, 15, 17, LeCar
57108 Peugeot 204, 304, 404, 403, 504, 604
58--- Other French

Germany

61209 Fiesta
61809 Opel Kadett, 1900, Rallye, Manta
61819 Opel GT
62209 Ford Capri, Capri II
65101 Mercedes Benz 350-450 (All Models except SL)
65103 Mercedes 600 (Limo)
65108 Mercedes Benz 180 thru 300 (All Models except SL)
65119 Mercedes Benz 190SL, 250SL, 280SL, 300SL, 350SL, 450SL

66104 VW Scirocco, Karmann-Ghia
 66109 VW 1200, 1300, 1500, 1600, "Beetle", Rabbit (75-), LaGrande Bug
 (75-), Dasher, 411, 412,
 66111 VW Van, Campmobile, "Bus"
 66114 VW Thing
 66219 Porsche 912, 914, 356, 911, 911 Turbo Carrera, 924, 928
 67108 BMW 2500/2800/2000, Bavaria 3 3L, 525, 530i, 630, 733i, 520
 67109 BMW 1600, 2002, 1802, 1602, 320i
 6715- BMW Motorcycle
 68108 Audi 100, 5000
 68109 Audi Fox, 60, 80, 90
 68309 NSU (All except Ro80)
 68301 NSU Ro80

Italy

72210 DeTomaso Mangusta, Pantera, Deauville
 75104 GTV, GT, GT Jr.
 75109 Alfa Romeo Berlina 1600, 1750, 2000, Guila, Alfa Romeo Alfetta,
 Montreal
 75119 Alfa Romeo 1600, 1750, 2000, Spider
 76109 Fiat 500, 650, 850, 124, 128, 131
 76119 Fiat 850 Spyder, 124 Spyder, 1500 Spyder, X1/9, Dino, Abarth
 77119 Ferrari 308, 365, Daytona, Dino
 78110 Maserati, Bora, Merak, Khamsin, Ghigli
 78208 Lancia Flavia, Flaminia
 78209 Fulvia, Beta
 78219 Lancia Scorpion, Sport, Zagato
 78410 Lamborghini Espada
 78419 Lamborghini Jarma, Urraco, Countach

Japan

81109 Buick-Isuzu Opel (76-)
 81312 Chevrolet-Isuzu LUV Pickup
 92112 Ford Courier (Toyo Kogyo)
 83209 Dodge-Mitsubishi Colt, Challenger (78-)
 83409 Plymouth-Mitsubishi Arrow, Sapporo
 85109 Mazda
 85112 Mazda Pickup
 86108 Datsun 200L, Laurel, 810
 86109 Datsun 1000, Sunny, 1200, PL510, PL610, B-210 (74), Datsun 100A,
 120A, 710, HLB 210, F10, 200 SX
 86112 Datsun PL620 Pickup
 86119 Datsun 1600, 2000, 240Z, 260Z, 280Z
 86108 Toyota Crown, Mark II, Cressida
 87109 Toyota Corolla, Sprinter, Celica, Carina, Corona
 87119 Toyota 2000GT
 87112 Toyota Hi-Lux Pickup
 87114 Toyota Land Cruiser
 8815- Honda (Motorcycle)
 88104 Honda Accord
 88109 Honda, Civic, 600, S800
 88209 Subaru
 8835- Suzuki (motorcycle)
 88309 Suzuki (automobile)
 8845- Kawasaki (motorcycle)
 8855- Yamaha (motorcycle)

Other (Sweden)

95109 Saab 95, 96, 99

95119 Saab Sonnett

95208 Volvo 122, 142, 144, 145, 164, 242, 244, 245, 264, 265, 544

95219 Volvo P1800

IMPORTED VEHICLES - BY NAME (4/76)

75104 GTV, GT, GT Jr.
 75109 Alfa Romeo Berlina 1600, 1750, 2000, Guila, Alfa Romeo Alfetta,
 Montreal
 75119 Alfa Romeo 1600, 1750, 2000, Spider
 48107 Aston Martin LaGonda
 48110 Aston Martin DB5, DB6, DBS
 68108 Audi 100, 5000
 68109 Audi Fox, 60, 80, 90
 45219 Austin Healy Sprite, 3000
 45108 Austin Maxi, A60, 1800
 45109 Austin Mini, Mini Cooper, America, 1300, Marina, 1100
 15404 Avanti II
 83409 Arrow (Plymouth)

 67108 BMW 2500/2800/3000, Bavaria, 3.3L, 525, 530i, 630, 733i, 520
 67109 BMW 1600, 2002, 1802, 1602, 320i

 62209 Capri, Capri II, Ford
 83209 Challenger (78-), Dodge-Mitsubishi
 81312 Chevrolet-Isuzu LUV Pickup
 55101 Citroen 21, ID20, DS21
 55108 Citroen GS
 55109 Citroen 2CV, Dyane, Ami
 55107 Citroen SM
 83209 Colt, Dodge-Mitsubishi
 43409 Cricket, Plymouth

 86108 Datsun 200L, Laurel, 810
 86109 Datsun 1000, Sunny, 1200 (-73), PL510, PL610, B-210 (74), Datsun
 100A, 120A, 710, HLB 210, F10, 200 SX
 86112 Datsun PL620 Pickup
 86119 Datsun 1600, 2000, 240Z, 260Z, 280Z
 72210 DeTomaso, Mangusta, Pantera, Deauville
 83209 Dodge-Mitsubishi Colt, Challenger (78-)

 77119 Ferrari 308, 365, Daytona, Dino
 76109 Fiat 500, 650, 850, 124, 128, 131
 76119 Fiat 850 Spyder, 124 Spyder, 1500 Spyder, X . /9, Dino, Abarth
 42209 Ford Anglia, Cortina, Escort, Corgair
 62209 Ford Capri
 42401 Ford Zephyr, Zodiac

 46109 Hillman Imp, Avenger
 31709 Holden
 8815- Honda (motorcycle)
 88104 Honda Accord
 88109 Honda, Civic, 600, S800

 45503 Jaguar 420
 45501 Jaguar XJ6, XJ12, XJ-S
 45510 Jaguar E type (XKE)
 48610 Jensen Interceptor
 48619 Jensen-Healey

66104 Karmann Ghia, VW
 8845- Kawasaki (motorcycle)

78410 Lamborghini Espada
 78419 Lamborghini, Jarma, Urraco, Countach
 78208 Lancia Flavia, Flaminia
 78209 Fulvia, Beta
 78219 Lancia, Scorpion, Sport, Zagato
 48814 Land Rover
 48219 Lotus Elan, Elite, +2s, Super 7, Europa, Eclat, Esprit, Sprint
 81312 LUV Pickup, Chevrolet-Isuzu

78110 Maserati, Bora, Merak, Khamsin, Ghigli
 85109 Mazda
 85112 Mazda Pickup
 65101 Mercedes Benz 350, 450 (All Models except SL)
 65103 Mercedes 600 (Limo)
 65108 Mercedes Benz 180 thru 300 (All Models except SL)
 65119 Mercedes Benz 190SL, 250SL, 280SL, 300SL, 350SL, 450SL
 45319 MGA, MGB, MBC, MG, Midget MGB/GT, MGC/GT
 45409 Morris Minor
 48319 Morgan

4895- Norton Motorcycle
 68309 NSU (All except Ro80)
 68301 NSU Ro80

61809 Opel Kadett, 1900, Rallye, Manta
 61819 Opel GT
 81109 Opel Isuzu (76-)
 57108 Peugeot 204, 304, 404, 403, 504, 604
 43409 Plymouth Cricket (71-72)
 66219 Porsche 912, 914, 911, 911 Turbo Carrera, 356

56108 Renault 16
 56109 Renault 5, 8, 10, 12, 15, 17, LeCar
 48403 Rolls Royce (Limo)
 48405 Rolls Royce (Shadow), Corniche, Camargue
 49508 Rover. 2000, 3500
 45814 Land Rover

95109 Saab 95, 96, 99
 95119 Saab Sonnett
 83409 Sapporo (Mitsubishi-Plymouth)
 53109 Simca 1204, GLS
 46209 Singer (automobile)
 88209 Subaru
 46309 Sunbeam Alpine (69-), Rapier
 46319 Sunbeam Alpine (-67), Tiger
 88309 Suzuki (automobile)
 8835- Suzuki (motorcycle)

87108 Toyota Crown, Mark II, Cressida
87109 Toyota Corolla, Sprinter, Celica, Carina, Corona
87119 Toyota 2000GT
87112 Toyota Hi-Lux Pickup
87114 Toyota Land Cruiser
45609 Triumph Herald
45608 Triumph 2000
45619 Triumph Spitfire, GT6, TR3, TR4, TR250, TR6, GT6+, Stag, TR7

41908 Vauxhall
95208 Volvo 122, 142, 144, 145, 164, 242, 244, 245, 164, 264, 265, 544
95219 Volvo P1800
66109 VW 1200, 1300, 1500, 1600, "Beetle", Rabbit, LaGrande Bug (75-),
Dasher, 411, 412
66111 VW Van, Campmobile, "Bus"
66104 VW Scirocco (75-), Karmann Ghia
66114 VW Thing

8855- Yamaha (motorcycle)

TABLE OF EQUIDISTANT POINTS FOR "C" MEASUREMENTS

If $t \leq 16$ inches, make front (4) perpendicular measurements from the following points to determine profile of nose.

Note: $C_1=0, C_4=L$

t	C ₂	C ₃	C ₄	C ₅
1	0.3	0.7		
2	6.7	1.3		
3	1	2		
4	1.3	2.7		
5	1.7	3.3		
6	2	4		
7	2.3	4.7		
8	2.6	5.3		
9	3	6		
10	3.3	6.7		
11	3.7	7.3		
12	4	8		
13	4.3	8.7		
14	4.7	9.3		
15	5	10		
16	5.3	10.7		

If $t > 16$ inches, make six (6) perpendicular measurements from the following points to determine profile of nose.

Note: $C_1=0, C_6=L$

t	C ₂	C ₃	C ₄	C ₅
17	3.4	6.8	10.2	13.6
18	3.6	7.2	10.8	14.4
19	3.8	7.6	11.4	15.2
20	4	8	12	16

L	C ₂	C ₃	C ₄	C ₅	L	C ₂	C ₃	C ₄	C ₅
21	4.2	8.4	12.6	16.8	53	10.6	21.2	31.8	42.4
22	4.4	8.8	13.2	17.6	54	10.8	21.6	32.4	43.2
23	4.6	9.2	13.8	18.4	55	11	22	33	44
24	4.8	9.6	14.4	19.2	56	11.4	22.4	33.6	44.8
25	5	10	15	20	57	11.6	22.8	34.2	45.6
26	5.2	10.4	15.6	20.8	58	11.8	23.2	34.8	46.4
27	5.4	10.8	16.2	21.6	59	12	23.6	35.4	47.2
28	5.6	11.2	16.8	22.4	60	12.2	24	36	48
29	5.8	11.6	17.4	23.2	61	12.4	24.4	36.6	48.8
30	6	12	18	24	62	12.6	24.8	37.2	49.6
31	6.2	12.4	18.6	24.8	63	12.8	25.2	37.8	50.4
32	6.4	12.8	19.2	25.6	64	13	25.6	38.4	51.2
33	6.6	13.2	19.8	26.4	65	13.2	26	39	52
34	6.8	13.6	20.4	27.2	66	13.4	26.4	39.6	52.8
35	7	14	21	28	67	13.6	26.8	40.2	53.6
36	7.2	14.4	21.6	28.8	68	13.8	27.2	40.8	54.4
37	7.4	14.8	22.2	29.6	69	14	27.6	41.4	55.2
38	7.6	15.2	22.8	30.4	70	14.2	28	42	56
39	7.8	15.6	23.4	31.2	71	14.4	28.4	42.6	56.8
40	8	16	24	32	72	14.6	28.8	43.2	57.6
41	8.2	16.4	24.6	32.8	73	14.8	29.2	43.8	58.4
42	8.4	16.8	25.2	33.6	74	15	29.6	44.4	59.2
43	8.6	17.2	25.8	34.4	75	15.2	30	45	60
44	8.8	17.6	26.4	35.2	76	15.4	30.4	45.6	60.8
45	9	18	27	36	77	15.6	30.8	46.2	61.6
46	9.2	18.4	27.6	36.8	78	15.8	31.2	46.8	62.4
47	9.4	18.8	28.2	37.6	79	16	31.6	47.4	63.2
48	9.6	19.2	28.8	38.4	80	16.2	32	48	64
49	9.8	19.6	29.4	39.2	81	16.4	32.4	48.6	64.8
50	10	20	30	40	82	16.6	32.8	49.2	65.6
51	10.2	20.4	30.6	40.8	83	16.8	33.2	49.8	66.4
52	10.4	20.8	31.2	41.6	84	17	33.6	50.4	67.2

Note: Make measurements from left to right (frontal or rear end) and from rear to front (side impact).

L	C ₂	C ₃	C ₄	C ₅	L	C ₂	C ₃	C ₄	C ₅
85	17	34	51	68	134	26.8	53.6	80.4	107.2
86	17.2	34.4	51.6	68.8	136	27.2	54.4	81.6	108.4
87	17.4	34.8	52.2	69.6	138	27.6	55.2	82.8	110.4
88	17.6	35.2	52.8	70.4	140	28	56	84	112
89	17.8	35.6	53.4	71.2	142	28.4	56.8	85.2	113.6
90	18	36	54	72	144	28.8	57.6	86.4	115.2
91	18.2	36.4	54.6	72.8	146	29.2	58.4	87.6	116.8
92	18.4	36.8	55.2	73.6	148	29.6	59.2	88.8	118.4
93	18.6	37.2	55.8	74.4	150	30	60	90	120
94	18.8	37.6	56.4	75.2	152	30.4	60.8	91.2	121.6
95	19	38	57	76	154	30.8	61.6	92.4	123.2
96	19.2	38.4	57.6	76.8	156	31.2	62.4	93.6	124.8
97	19.4	38.8	58.2	77.6	158	31.6	63.2	94.8	126.4
98	19.6	39.2	58.8	78.4	160	32	64	96	128
99	19.8	39.6	59.4	79.2	162	32.4	64.8	97.2	129.6
100	20	40	60	80	164	32.8	65.6	98.4	131.2
102	20.4	40.8	61.2	81.6	166	33.2	66.4	99.6	132.8
104	20.8	41.6	62.4	83.2	168	33.6	67.2	100.8	134.4
106	21.2	42.4	63.6	84.8	170	34	68	102	136
108	21.6	43.2	64.8	86.4	172	34.4	68.8	103.2	137.6
110	22	44	66	88	174	34.8	69.6	104.4	139.2
112	22.4	44.8	67.2	89.6	176	35.2	70.4	105.6	140.8
114	22.8	45.6	68.4	91.2	178	35.6	71.2	106.8	142.4
116	23.2	46.4	69.6	92.8	180	36	72	108	144
118	23.6	47.2	70.8	94.4	182	36.4	72.8	109.2	145.6
120	24	48	72	96	184	36.8	73.6	110.4	147.2
122	24.4	48.8	73.2	97.6	186	37.2	74.4	111.6	148.8
124	24.8	49.6	74.4	99.2	188	37.6	75.2	112.8	150.4
126	25.2	50.4	75.6	100.8	190	38	76	114	152
128	25.6	51.2	76.8	102.4	192	38.4	76.8	115.2	153.6
130	26	52	78	104	194	38.8	77.6	116.4	155.2
132	26.4	52.8	79.2	105.6	196	39.2	78.4	117.6	156.8

L	C ₂	C ₃	C ₄	C ₅
198	39.6	79.2	118.8	158.4
200	40	80	120	160
202	40.4	80.8	121.2	161.6
204	40.8	81.6	122.4	163.2
206	41.2	82.4	123.6	164.8
208	41.6	83.2	124.8	166.4
210	42	84	126	168
212	42.4	84.8	127.2	169.6
214	42.8	85.6	128.4	171.2
216	43.2	86.4	129.6	172.8
218	43.6	87.2	130.8	174.4
220	44	88	132	176
222	44.4	88.8	133.2	177.6
224	44.8	89.6	134.4	179.2
226	45.2	90.4	135.6	180.8
228	45.6	91.2	136.8	182.4
230	46	92	138	184
232	46.4	92.8	139.2	185.6
234	46.8	93.6	140.4	187.2
236	47.2	94.4	141.6	188.8
238	47.6	95.2	142.8	190.4
240	48	96	144	192
242	48.4	96.8	145.2	193.6
244	48.8	97.6	146.4	195.2
246	49.2	98.4	147.6	196.8
248	49.6	99.2	148.8	198.4
250	50	100	150	200
252	50.4	100.8	151.2	201.6
254	50.8	101.6	152.4	203.2
256	51.2	102.4	153.6	204.8
258	51.6	103.2	154.8	206.4
260	52	104	156	208

APPLICATION OF THE
OCCUPANT INJURY CLASSIFICATION (OIC)

INTRODUCTION

The Occupant Injury Classification (OIC) is a scheme for classifying individual occupant injuries in a manner that permits correlation of injury sources (contact areas) and specific injuries. The OIC (Figure 1) follows an approach similar to the SAE J224a Collision Deformation Classification (CDC, formerly VDI). Four letters are used to encode Body Region, Aspect, Lesion, and Body System/Organ, followed by a numeric Abbreviated Injury Scale (AIS) code.

In the National Accident Sampling System study, each of the six most serious injuries incurred by an occupant will be recorded; each injury code will have a concomitant code for the most likely injury source, or contact point.

A great majority of injuries that can occur in auto accidents are found explicitly in the OIC dictionary. This dictionary is printed in the 1976 MDAI Editing Manual and Reference Information, DOT-HS-802-411, pp. 84-102.

An effort should be made by the coder to find the explicit code for an injury listed in the dictionary. If it can not be found, then one should proceed carefully according to the coding conventions set up for the NASS* and the valid symbol combinations (Figure 3).

It is recommended that the investigator familiarize himself fully with the injuries in the dictionary since some of the codes will not be immediately obvious to him.

*See NASS Coding Manual

OCCUPANT INJURY CLASSIFICATION (OIC)

<u>1</u>	<u>BODY REGION</u>	<u>2</u>	<u>ASPECT</u>	<u>3</u>	<u>LESION</u>	<u>4</u>	<u>SYSTEM/ORGAN</u>
H	Head-Skull	R	Right	L	Laceration	S	Skeletal
F	Face	L	Left	C	Contusion	V	Vertebrae
N	Neck	B	Bilateral	A	Abrasion	J	Joints
S	Shoulder	C	Central	F	Fracture	D	Digestive
X	Upper Extremities	A	Anterior/Front	P	Pain	L	Liver
A	Arm (Upper)	P	Posterior/Back	K	Concussion	N	Nervous System
E	Elbow	S	Superior/Upper	H	Hemorrhage	B	Brain
R	Forearm	I	Inferior/Lower	V	Avulsion	C	Spinal Cord
W	Wrist-Hand	W	Whole Region	R	Rupture	E	Eyes, Ears
C	Chest	U	Unknown	S	Sprain		Cardiovascular
M	Abdomen			D	Dislocation	A	Arteries
B	Back			N	Crushing	H	Heart
P	Pelvic-Hip			M	Amputation	Q	Spleen
Y	Lower Extremities			B	Burn	G	Urogenital
T	Thigh			X	Asphyxia	K	Kidneys
K	Knee			O	Other	R	Respiratory
L	Leg (Lower)			U	Unknown	P	Pulmonary, Lungs
Q	Ankle-Foot					M	Muscles
O	Whole Body					I	Integumentary
U	Unknown					W	All systems in Region
						U	Unknown

<u>5</u>	<u>AIS</u>	
1	Minor	
2	Moderate	REGION
3	Severe	ASPECT
4	Serious	LESION
5	Critical	SYSTEM/ORGAN
6	Maximum	
7	Injured, severity unknown	ABBREVIATED INJURY SCALE
8	NA - uninjured	
9	Unknown if injured	

FIGURE 1

DEFINITION OF OCCUPANT INJURY CLASSIFICATION FACETS

The NASS Occupant Injury Classification is not a classification of overall occupant injury, but is a scheme for recording each individual injury an occupant sustains. A series of independently defined classification facets are combined as a sequence of letters to describe an injury in terms of Body Region, Aspect, Lesion/Diagnosis and Body System/Organ. As with the CDC (or VDI) a numerical severity code terminates the OIC.

BODY REGIONS - Body Regions (Figure 2) are defined as subsets of the body's surface. Note that only the pelvic bones, sacrum, coccyx, joint, posterior muscles and tissue covering these are included in the hip region (P). Internal organs in the pelvic structure are included in the abdomen region (M).

OIC Body Region Codes

H Head (Skull, Scalp, Ears)
 F Face (Forehead, Nose, Eyes, Mouth)
 N Neck (Cervical Spine, C1-C7)
 S Shoulder (Clavicle, Scapula, Joint)
 X Upper Extremities (Whole Arm)
 A Arm (Upper)
 E Elbow
 R Forearm
 W Wrist-Hand (Fingers)
 B Back (Thoraco-Lumbar Spine, T1-T12, L1-L5)
 C Chest (Anterior and Posterior Ribs)
 M Abdomen (Diaphragm and Below)
 P Pelvis-Hip
 Y Lower Extremities (Whole Leg)
 T Thigh (Femur)
 F Knee
 L Leg (Below Knee)
 Q Ankle-Foot (Toes)
 C Whole Body
 U Unknown, Unclassifiable

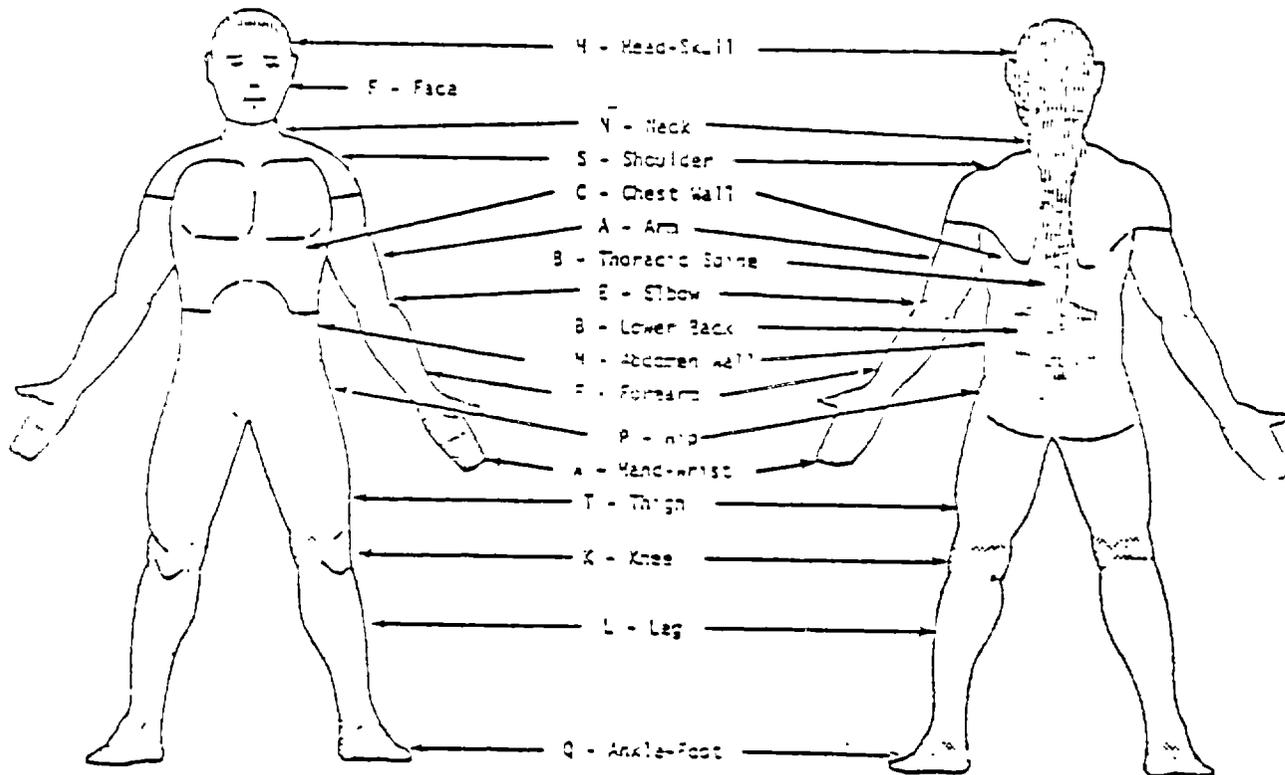


FIGURE 2. OIC BODY REGIONS

ASPECT - The Aspect codes provide a fairly specific means of locating an injury in a body region e.g., (NP); Neck Posterior. The coding of the arms and legs depends on the use of (P) and (L) for distinguishing which extremity region was injured. The code (B) for bilateral is used to describe an injury that is best characterized as happening to both sides of a body region. Examples include (CB) for bilateral rib fractures in the chest, and (KB) for contusions to both knees on the steering column. As discussed in the last section, only certain Aspect codes are permitted for each Body Region in order to ensure consistent coding.

OIC Aspect Codes

R Right
 L Left
 B Bilateral
 C Central
 A Anterior/Ventral/Front
 P Posterior/Dorsal/Back
 S Superior/Cranial/Upper
 I Inferior/Caudal/Lower
 W Whole Region
 U Unknown, Unclassifiable

The aspect code is the second letter of the OIC. It is a refinement of the first letter, i.e., a suffix to the body region. Therefore, it has meaning only in relationship to the body region to which it is applied. It cannot be used independent of the first letter for coding or analysis. Note that while the combination of Body Region and Aspect codes do not precisely pinpoint injury location they do provide additional resolution.

DIAGNOSIS OF LESION - This fact is primarily intended to code diagnostic information concerning pathological changes and not the signs and symptoms. Pain is the one exception, as it is useful for encoding those painful but vague abnormalities that are not specifically diagnosed. See Coding Convention Rule #18.

BODY SYSTEMS/ORGANS - The fourth and final letter of the Occupant Injury Classification is the specific Body System or Organ affected. Rather than list all the organs, the categories were based upon the major body systems. The combination of body system and body region categories work together to define specific tissue areas. For example, FILD-1, the Face, Inferior, and Digestive system combine to infer "Mouth". Similarly CRFS-2 (Chest Right Fracture Skeletal) indicates a simple rib fracture on the right side.

OIC SYSTEM/ORGAN

S Skeletal, Bones
 V Vertebrae
 J Joints, Articulations, Ligaments
 D Digestive
 L Liver
 N Nervous System
 B Brain
 C Spinal Cord
 E Eyes, Ears
 Cardiovascular (Use A, H or Q)
 A Arteries, Veins
 H Heart
 Q Spleen
 G Urogenital
 K Kidneys
 R Respiratory
 P Pulmonary, Lungs

- M Muscles
- I Integumentary (e.g. Skin, Hair)
- W All Systems in Region
- U Unknown, Unclassified

Some organs of particular interest have been provided with specific codes. These include the lungs, heart, liver, spleen, kidneys, vertebrae, joints, spinal cord, arteries, veins, eyes and ears. The W for all systems in region is used with amputation, massive crushing and incineration injuries. See #17 under Coding Convention.

ABBREVIATED INJURY SCALE - The Occupant Injury Classification is terminated with the Abbreviated Injury Scale (AIS-76)¹ severity code in the same manner that the vehicle Collision Deformation Classification ends with a numeric extent code. The AIS has received wide acceptance and application. It provides a scaling of tissue damage that is consistent with the intent of the OIC. The AIS is not used here to encode overall occupant injury severity.

Abbreviated Injury Scale

- 1 Minor
- 2 Moderate
- 3 Severe (Not Life-Threatening)
- 4 Serious (Life-Threatening)
- 5 Critical (Survival Uncertain)
- 6 Maximum (currently untreatable)
- 7 Injured, severity unknown
- 8 Not injured, N/A
- 9 Unknown if injured

¹ The Abbreviated Injury Scale (1976 Revision), Joint Committee of AAAAM, SAE, and AMA, 33 pages. 1976.

OVERALL OIC APPLICATION PROCEDURE

The OIC facilitates the description of many specific types of tissue damage and permits the recording of injury causation or injury source on an what an "injury" is. An injury, for purposes of the NASS field investigations, may be defined as damage to, or pathological changes to, living human tissue as a result of deceleration through contact with an external object. Each row of OIC and contact source operationally defines a single injury. A single contact code is used to describe the primary source of injury. In order to link injuries with their injury sources (contact areas), traumas to a body region due to different contacts are always coded as separate injuries i.e., on separate lines. A driver sustaining two facial lacerations, one from the steering wheel and one from the windshield, would have two OIC's, on two lines of the form, each with its associated contact code.

Impact trauma can overlap into two or more body regions, which means two or more OIC's are required to code what would by our definition be two or more separate injuries. For example, a passenger striking the right A pillar might dislocate his shoulder and bruise his upper arm. The injuries would be described by two OICs (SRDJ-3 and ARCI-1). When multiple lesions (e.g., lacerations, contusions, burns) occur to the extremities the X and Y codes permit a more concise injury description.

The recording of several traumas in a single body area that resulted from one contact presents some problems. Is the rib fracture and pneumothorax caused by steering column contact one injury or two injuries? See Rule #6. From an injury causation point of view only unique points of injury producing energy transfer should be recorded, but this approach might limit the recording of some significant traumatic conditions resulting from the dissipation of energy.

INDIRECT OR INDUCED INJURY - The concept of "induced injury" or indirect injury is revealed by the following example: A passenger strikes his forehead on the windshield and sustains a bump on the head. Obviously, the bump on the head is related to the window. But, in addition, the passenger has a pain in the neck. Though no specific car component was struck, this would be an injury induced from windshield impact. It is analogous to induced damage to a car in areas not in the impact area. In the instance of a dislocated hip which resulted when the knee struck the instrument panel, instrument panel would be coded as the injury producing contact.

While one could consider all injury except skin injury to be "induced from transmitted forces", the interpretation made in the OIC is that indirect injuries are injuries to one body region caused by a blow or

contact in some other body region. In other words, indirect injuries occur when traumatic energy is transmitted through one body region to another body region. The vehicle area(s) directly struck by the other body region should be coded as the contact area(s) for the indirect injury.

CONSEQUENCES - The critical and fatal consequences of primary trauma can be coded as separate injuries to qualify the primary injury but may not be assigned a higher AIS. For example, a severe wrist laceration involving an artery and resulting in fatal hemorrhaging would be coded: WRLA-3, WREA-3. The hemorrhaging can not be given a 6 to indicate the fatality.

Death due to asphyxiation is not coded in the AIS-1976 revision because a clear distinction has now been made between an injury and the result of that injury. In order to keep a record of injuries resulting in asphyxiation, use an AIS of (9), (e.g., NAXR-9).

VALID OIC CODE COMBINATIONS - While the valid combinations of OIC letters and injury severity codes are generally self-defined, the chart in Figure 3 displays most of the valid combinations. The chart provides assistance in data recording and will be used by the computer to aid in editing recorded OICs.

NASS Injury Coding Conventions for the Occupant Injury Classification

Preliminary Draft: January 30, 1978

1. Pain (lesion = F) is always coded to the muscle (system = M). It cannot be coded to the joints, vertebrae, or skeletal system.

2. How to choose which injuries to code. The following rules are given in the field forms.

"If there are six or less injuries listed in the O.I.C. reduction section, code all of the injuries ordered by Source of Data (1st--hospital/medical, 2nd--treating physician, or 3rd--interviewee and other sources) and by AIS severity within source.

"If there are more than six injuries, order the injuries by source and by AIS severity within source. Code this ordering, injury by injury. If a group of ordered injuries has the same source, the same AIS, and the group includes at least the sixth and seventh injuries in the ordering, then a choice must be made as to which injury or injuries to code.

"Choose the injury or injuries that will enable the maximum number of different ISS body regions to be represented in the coded data. If no new ISS body region can be added, then simply code in accordance with the original ordering.

"If the occupant has less than six injuries, then the number of rows required to be completed is equal to the number of injuries plus one (e.g., no injuries requires one row, i.e., columns 36 to 43). In the additional row "not applicable" will be coded for all variables including AIS severity. In essence, "not applicable" means "no injury"."

Other points to consider if you must make a choice: Try to associate contact points with individual injuries. List individual injured areas if possible, instead of lumping them together into a code of X, Y, or O. For instance, if there are lacerations to both thigh and shin, code both TLLI-1 and LLLI-1 instead of YLLI-1.

3. A headache is coded HWKB-1 unless the ache can be located in a specific portion of the head (such as HLKB-1).

4. Lacerations are minor (--LI-1) unless they are "deep or extensive". "Deep" is defined as cutting into the subcutaneous tissue (the connective tissue, or muscle, beneath the skin). "Extensive" means at least 3" long. The number of sutures is not a determining factor.

Abrasions and contusions are minor (--MI-) or --OI-) unless they are "major". "Major" means that at least 50% of the body region is affected.

5. If the AIS can be determined to be one of the consecutive numbers, but you don't know which one, code the lower number. For instance, see the previous rule: if you have a thigh laceration, but you don't know if it is extensive or not, code it as minor (TRLI-1). Again, a pelvic fracture of an unknown bone would be coded PUPS-2.

6. If a single contact causes multiple injuries to a body region, damage to each major layer should be coded. For example, broken ribs and hemothorax caused by the same steering column contact would be coded as two separate injuries. The only exception is if the two injuries are implicit in a single OIC code. For instance, a displaced skull fracture with cerebral lacerations is described by the single code H-LB-4 which is found in the OIC Dictionary. Similarly, in an open fracture the break in the skin is not coded since it is implied by the raised AIS.

7. Remember that, in NASS, there is no AIS = 0. "No injury" is coded AIS = 8.

8. If more than 3 or 4 ribs, on either or both sides of the chest, are fractured, look for possible respiratory embarrassment (flail chest) or other internal injuries such as hemothorax or aortic laceration.

9. When transferring information from medical records onto the skeletal diagram, be specific. Record the specific bone involved, make an accurate diagram of lacerations and contusions, and so forth. Use correct and precise medical terminology.

10. Do not code the same injury twice just because you hear about it from two different sources. In other words, code from the interview only those injuries which you have not already coded from the medical records.

11. Code a stiff neck, neck ache, or muscle soreness as NPPM-1. Note that there is no code for "whiplash". If whiplash is reported, look further in the dictionary for a specific description of the injury: strain, sprain, contusion, or fracture.

14. Try to avoid using the AIS 7 and AIS 9 codes as much as possible. See rule #5 in this regard.

15. Note that a "Multiple long bone fracture in same extremity" (arm or leg) has a higher AIS than a simple fracture. This phrase means "two or more different long bones fractured on the same limb" or "two or more fractures in the same long bone". This is an exception to rule #2: if two different long bones are fractured, do not code separately. Note also that if you are running out of coding room, fractures of both legs (or both arms) can be coded as bilateral (aspect = B).

16. The OIC dictionary is weak in listing and coding head injuries. If you can't find a specific AIS number in the dictionary for the injury you are trying to code, try to find one in the dictionary that's similar and use its AIS code.

17. The system/organ code assigns a code to major systems and assigns separate codes to significant organs within the system. The system code is to be used for all parts of the system which do not have individual codes. Thus, all digestive organs are coded D except for the liver, which is coded L.

18. The mouth, with the exception of the teeth, is coded as part of the digestive system (D). Teeth are skeletal (S).

19. The forehead is coded "face superior" (FS), not right or left.

20. Fractures and dislocations of joints are coded J for system, not S. See the dictionary, elbows and knees, for examples.

21. The W code for system is used for massive crushing or amputation injuries.

NATIONAL ACCIDENT SAMPLING SYSTEM -- VALID O.I.C. COMBINATIONS

SUB-TABLE: VALID: BODY REGION, ASPECT -- CODE COMBINATIONS

BODY REGION		ASPECTS	ASPECT CODES
HEAD	H	R, L, B, P, S, I, W	R RIGHT
FACE	F	R, L, B, C, S, I, W	L LEFT
NECK	N	R, L, B, A, P, W	B BILATERAL
SHOULDER	S	R, L, B	C CENTRAL
UPPER EXTREMITIES	X, A, E, R, W	R, L, B	A ANTERIOR
LOWER EXTREMITIES	Y, T, K, L, Q	R, L, B	P POSTERIOR
CHEST	C	R, L, B, C, W	S SUPERIOR
ABDOMEN	M	R, L, B, C, S, I, W	I INFERIOR
BACK	B	S, I, W	W WHOLE REGION
PELVIC-HIP	P	R, L, A, P, W	U UNKNOWN
WHOLE BODY	O	R, L, A, P, S, I, W	

MASTER TABLE: VALID: SYSTEM/ORGAN, LESION ASPECT, BODY REGION -- CODED COMBINATIONS

SYSTEM/ORGAN:	LESION:	ASPECT:	BODY REGION:
SKELETAL SYSTEM			
GENERAL	S	C, F, N, O	• ALL, EXCEPT H
TEETH	S	F, V, O	I F
VERTEBRAE	V	C, F, S, D, N, O	• N, B, P
JOINTS	J	C, F, S, D, N, O	• F, P, S, W, E, Q, K
LIGAMENTS	J	L, C, S, O	• S, W, E, Q, K
DIGESTIVE SYSTEM			
GENERAL	D	L, C, A, H, V, R, B, O	• F, N, M, C
LIVER	L	L, C, A, F, H, V, R, B, O	R, S M
NERVOUS SYSTEM			
GENERAL	N	L, C, V, B, O	• ALL, EXCEPT H
BRAIN	B	L, C, K, H, V, R, B, O	• H
SPINAL CORD	C	L, C, H, V, R, B, O	• H, N, B, P
EARS	E	L, C, A, H, V, R, D, B, O	R, L, B H
EYES	E	L, C, A, H, V, R, B, O	R, L, B F
CARDIOVASCULAR SYSTEM			
ARTERIES, VEINS	A	L, H, V, R, B, O	• ANY REGION
HEART	H	L, C, H, R, B, O	C C
SPLEEN	Q	L, C, F, H, R, B, O	L M
UROGENITAL SYSTEM			
GENERAL	G	L, C, A, H, V, B, O	I M
KIDNEYS	K	L, C, A, F, H, V, R, B, O	R, L, B M
BLADDER	B	L, C, A, R, B, O	I M
RESPIRATORY SYSTEM			
DIAPHRAGM	R	L, C, F, V, R, O	S M
NOSE	R	L, C, A, F, H, V, B, X, O	C F
TRACHEA	R	L, C, A, F, V, D, B, X, O	A N
WINDPIPE	R	L, C, F, R, B, X, O	C C
LUNGS	P	L, C, H, V, R, B, O	R, L, B C
MUSCLES	M	L, C, P, V, R, B, O	• ANY REGION
SKIN	I	L, C, A, V, B, O	• ANY REGION
ALL SYSTEMS IN REGION	W	N, M, B, O	• N, S, X, A, E, R, W, Y, T, K, L, Q
	W	N, B, O	H, C, M, O
	W	B, O	F, B, P

U - UNKNOWN IS VALID IN ANY POSITION IN ANY COMBINATION.

• - SEE SUB-TABLE FOR VALID ASPECT CODES IN EACH BODY REGION.

OIC - INJURY SCALE DICTIONARY

To insure more consistency in coding OIC's and to ease the task for field investigators, a detailed OIC Injury Scale Dictionary is included. The structure and contents are identical to "The Abbreviated Injury Scale (AIS), 1976 Revision," Appendix E Injury Scale Dictionary, except for the addition of a few injuries noted by an asterisk. The same format was used with the addition of a four letter OIC suffix to the original AIS codes for each injury. In some instances a second OIC has been added as an associated OIC.

Description of Body Regions

<u>Dictionary Sections</u>	<u>OIC Regions</u>
General	A Any body region: external or surface C Whole Body U Unknown, Unclassifiable Body Region
Head	B Head (skull, scalp, ears) F Face (forehead, nose, eyes, mouth)
Neck	N Neck (cervical spine C1-C7, throat)
Chest	C Chest (ribs, thoracic organs) ES Back Superior (thoracic spine T1-T12)
Abdomen	M Abdomen (abdominal, pelvic contents) BI Back Inferior (lumbar spine L1-L5)
Pelvis	P Pelvis (bony structures)
Extremities	S Shoulder, (clavicle, scapula) X Upper Extremities (whole arm) A Arm (upper) E Elbow R Forearm W Wrist-Hand-Digits Y Lower Extremities (whole leg) T Thigh (femur) K Knee L Leg (below knee) Q Ankle-Foot-Digits

Severity Codes

0	No injury
1	Minor
2	Moderate
3	Severe (not life-threatening)
4	Serious (life-threatening)
5	Critical (survival uncertain)
6	Maximum (currently untreatable)
9	Unknown

GENERAL--EXTERNAL (Any Body Region)

01-418

INJURY DESCRIPTION

- Abrasion
- *_AI-2 major
 - *_AI-1 superficial
- Burn
- *_BI-1 all 1° (up to 100% body surface)
 - *_BI-1 small 2° (1%-10% body surface)
 - *_BI-2 2° or 3° (11%-20% body surface)
 - *_BI-3 2° or 3° (21%-30% body surface)
 - *_BI-4 2° or 3° (31%-50% body surface)
 - *_BI-5 2° or 3° (51%-90% body surface)
 - *_BI-6 2° or 3° (more than 90% body surface, including incineration)
- *_PI-1 Complaint of regional or overall ache, joint stiffness, or muscle tenderness
- Contusion
- *_CI-2 major
 - *_CI-1 superficial
- Laceration
- *_LI-2 deep and/or extensive (into subcutaneous tissue)
 - *_LN-3 major nerves and/or
 - *_LA-3 vessel involvement
 - *_LI-1 superficial
- 0000-1 Minor Injury with unspecified details
- 0000-9 Injury with no details

_ - Any body region and aspect codes valid for that region.

HEAD

OIC Body Region: H-Head (skull, scalp, ears, brain)

Valid Aspect Codes:

R,L,E Right, Left, Bilateral (ears)
 S Superior (top of head)
 I Inferior (base of skull)
 P Posterior (back of head)
 W Whole Region
 U Unknown

OIC Body Region: F-Face (forehead, nose, eyes, mouth)

Valid Aspect Codes:

R,L,E Right, Left, Bilateral (eyes, cheekbones)
 C Central (nose and area round)
 S Superior (forehead)
 I Inferior (mouth, chin, lower jaw)
 W Whole Region
 U Unknown

System/Organ coding unique to Head and Face Region:

H__B Brain
 H__E Ear
 F__E Eye
 FI_D Mouth (tongue)
 FC_B Nose
 FI_S Teeth

OIC-AIS INJURY DESCRIPTION

Brain stem [see Medulla]

F.LE-1 Canaliculus (tear duct) laceration

HPCB-4 Cerebellar (posterior fossa) lesion, with hematoma
 extradural

HPCB-5 intracerebellar or subdural

H_KB-2 Cerebral concussion with or without undisplaced skull
 fracture, unconsciousness less than 15 minutes, no
 other neurological signs
 (+1 AIS if involving displaced or depressed skull
 fracture)

'_' - Any code valid for region may be used.

'.' - Aspect codes L, R, or B may be used.

H_KB-3 Cerebral concussion with or without skull fracture,
 unconsciousness more than 15 minutes, no other
 neurological signs

 Cerebral concussion and contusion, with or without
 skull fracture
 H_KB-4 <12 hrs. unconsciousness, with other neurological
 signs
 H_KB-5 >12 hrs. unconsciousness, including intracerebral
 hemorrhage with other severe neurological signs
 H_KB-5 >24 hrs. unconsciousness, and other neurological
 signs

 P_VE-1 Chroid (eye) rupture

 Conjunctiva
 P_AE-1 abrasion
 P_CE-1 contusion
 P_LE-1 laceration

 Cornea
 P_AE-1 abrasion
 P_CE-1 contusion
 P_LE-1 laceration

 H_MW-6 Decapitation, partial or complete

 H_OE-1 Ear canal injury

 Ethmoid fracture, involving
 P_CPB-3 dural tear & cerebrospinal fluid leak
 P_CPB-2 hemorrhage
 P_CPB-2 nasolacrimal or nasofrontal duct

 P_VE-3 Eye avulsion

 Face (soft tissue)
 P_AI-1 abrasion
 P_CI-1 contusion
 laceration
 P_LI-2 deep and/or extensive
 P_LN-3 nerve involvement
 P_LA-3 vessel involvement
 P_LI-4 severe hemorrhage
 P_LI-1 superficial

 P_SPS-2 Frontal bone fracture (+1 AIS for open and/or
 displaced)

 H_KB-1 Head injury with headache, dizziness; dazed; no loss of
 consciousness; no other neurological signs

 H_OE-1 Inner ear injury with deafness or vertigo (+1 if both)

 P_LE-1 Iris laceration

Lid

F.AE-1 abrasion
 F.VE-2 avulsion
 F.CE-1 contusion
 F.LE-1 laceration

Mandible fracture
 (+1 AIS for open and/or displaced)

FIFS-2 body
 FIFS-1 ramus
 FIFS-2 subcondylar
 FIDJ-2 temporo-mandibular joint dislocation

FIFS-2 Maxilla fracture (+1 AIS for open and/or displaced)

Medulla (brain stem)

HICB-5 contusion
 HINE-6 crush
 HIE-6 laceration

PCFR-1 Nose fracture (+1 AIS for open and/or displaced)

PCHR-1* Nose hemorrhage (bloody nose)*

P.VN-3 Optic nerve avulsion

P.FS-3 Orbit fracture (+1 AIS for open and/or displaced)

H.DJ-2 Ossicular chain (ear bone) dislocation

Pinna (outer ear)

H.AE-1 abrasion
 H.VE-2 avulsion
 H.CE-1 contusion
 H.LE-1 laceration

P.LE-1 Retina laceration
 P.IE-2 with detachment

Scalp

H_AI-1 abrasion
 H_CI-1 contusion
 laceration
 H_II-2 deep and/or extensive
 H_II-1 superficial

Sclera (eye)

P.IE-2 laceration
 P.BE-2 rupture

Skull fracture

H_PS-2 closed, undisplaced; no loss of consciousness

* - Not in the 1976 AAAM-SAE-AMA AIS Dictionary and not reviewed
 by the Joint Committee on Injury Scaling.

H.PS-4 displaced or depressed,
 F.HA-4 in cerebral laceration, severe neurological
 signs or sinus/arterial injury with clot
 H.HA-6 massively crushed

 Sphenoid fracture
 F.PS-3* no fluid or hemorrhage involvement*
 F.PS-4 involving cerebrospinal fluid
 F.PS-4, F.HA-4 involving hemorrhage

 Teeth
 F.IVS-1 avulsion
 F.IOS-1 dislocation (loose)
 F.IFS-1 fracture

 Tongue
 laceration
 F.ILO-2 deep and/or extensive
 F.ILO-1 superficial

 Temporal bone fracture, involving
 H.PS-2 deafness (+1 AIS for open and/or displaced)
 H.PS-5, H.HE-5 hemorrhage (+1 AIS for open and/or displaced)
 H.PS-3 vertigo (+1 AIS for open and/or displaced)

H.PE-2 Tympanic membrane (ear drum) rupture

 Uvea (eye)
 P.AE-1 abrasion
 P.CE-1 contusion

P.LE-1 Vitreous laceration

F.PS-2 Zygoma fracture

* - Not in the 1976 AAAM-SAE-AMA AIS Dictionary and not reviewed
 by the Joint Committee on Injury Scaling.

NECK

CIC Body Region: N-Neck

Valid Aspect Codes:

R,L,B Right, Left, Bilateral
 A Anterior (front, trachea, esophagus)
 P Posterior (back, cervical spine C1-C7)
 W Whole Region
 U Unknown

System/Organ Coding unique to Neck Region:

NA-B Esophagus, Larynx, Pharynx, Trachea

 CIC-AIS INJURY DESCRIPTION

Cervical spine

NFCM-1 acute strain
 NPCC-2 contused cord
 NPNV-6 crush (C-3 or above)
 NPFV-6, NP.C-6 fracture (C-3 or above) with cord damage
 NPCV-6, NP.C-6 dislocation (C-3 or above) with cord damage
 NFFV-3 fracture (C-4 or below)
 (+2 AIS if involving cord damage)
 NFDV-3 dislocation (C-4 or below)
 (+2 AIS if involving cord damage)
 NPPM-1 injury complaint with no fracture or dislocation
 ("whiplash")
 NPIC-6 laceration (C-3 or above)
 NPFV-3 transverse or spinous process fracture
 NWWW-6* Decapitation (at neck), partial or complete*

Esophagus

NAVR-5 avulsion
 NACB-2 contusion
 NALR-5 laceration
 NACB-4 obstruction

Larynx

NAVR-5 avulsion
 NAFB-4 fracture
 NALR-4 laceration
 obstruction
 NAOR-2 moderate respiratory difficulty
 NACB-5 serious respiratory difficulty

 '.' - Lesion codes L, C, or N may be used.

 * - Not in the 1976 AAAM-SAE-AMA AIS Dictionary and not reviewed
 by the Joint Committee on Injury Scaling.

Pharynx

NAOP-1 contusion (+1 for necrotoma involvement)
 NALS-1 laceration (+1 for hemorrhage involvement)
 NAOP-5 constriction
 NALS-1 fracture

Throat (soft tissue)

NAAI-1 abrasion
 NACI-1 contusion
 laceration
 NALI-2 deep and/or extensive
 NALI-2 nerve involvement
 NALA-3 vessel involvement
 NALA-4, NABA-4 severe hemorrhage
 NALI-1 superficial

Trachea

NAV8-5 avulsion
 WAN8-3 crush

CHEST

CIC Body Region: C-Chest

Valid Aspect Codes:

R,L,E Right, Left, Bilateral
 C Center (external front, mediastinum,
 esophagus)
 W Whole Region
 U Unknown

CIC Body Region and Aspect:

ES Back Superior (thoracic spine T1-T12)

Note: Anterior and Posterior aspects are invalid for
 Chest Region.

System/Organ coding unique to Chest Region:

CC_B Bronchial
 CC_H Heart
 C_P Lung

 OIC-AIS INJURY DESCRIPTION

CCLA-5 Aorta laceration
 CCBB-5 Bronchial (trachial) perforation, rupture
 CCLB-5 laceration
 CWNW-6 Chest, crushed (massive)
 Chest wall (soft tissue)
 C_AI-1 abrasion
 contusion
 C_CI-2 major
 C_CI-1 superficial
 laceration
 C_LI-2 deep and/or extensive
 C_LI-1 superficial
 C_LI-4 perforation, puncture
 CCLA-5 Coronary artery laceration
 Heart
 CCCH-3 contusion

 '_' - Any code valid for region may be used.

'.' - Aspect codes L, R, or B may be used.

CCLH-5 laceration, perforation, puncture
 CCLH-5 Intracardiac (valve, septum) puncture,
 CCRH-5 rupture

 Lung
 C.OP-3 contusion
 laceration
 C.LP-5 deep and/or extensive
 C.LP-4 superficial

 Myocardium
 CCRH-4 contusion (+1 if severe)
 CCLH-5 laceration (+1 for multiple chamber involvement)
 CCRH-5 Rupture (+1 for multiple chamber involvement)

 Pericardium
 CCRH-3 contusion
 laceration
 CCLH-5 deep and/or extensive
 CCLH-4 superficial

 C.LA-5 Pulmonary artery laceration

 C.LA-5 Pulmonary vein laceration

 C.PS-2 Rib fracture
 C.PS-2* cracked ribs*
 C.PS-4 flail chest involvement
 C.PS-2 single rib (+1 AIS for open and/or displaced)
 C.PS-3 two or more ribs (+1 AIS for open and/or
 displaced)

 Sternoclavicular joint
 S.DJ-3 dislocation
 S.LJ-3 laceration through synovia (into joint)

 CCPS-2 Sternum fracture (+1 AIS for open and/or displaced)

 CCLA-5 Superior/inferior vena cavae laceration, puncture,
 CCRA-5 rupture

 Thoracic cavity injury involving unilateral
 CCHH-4 hemothorax (+1 AIS if bilateral)
 C.HP-3 hemothorax (+1 AIS if bilateral)
 CCOH-4 pneumothorax (+1 AIS if bilateral)
 C.OP-3 pneumothorax (+1 AIS if bilateral)

 Thoracic spine
 BSOM-1 acute strain
 BSOC-5 cord transection

* - Not in the 1976 AAAA-SAE-AMA AIS Dictionary and not reviewed by the Joint Committee on Injury Scaling.

BSCC-2* cord contusion*
BSFV-3 fracture (lamina, body, pedicle, facet) with or
without dislocation, with
BSFV-5 cord transection
BSFV-4 nerve root damage
BSFV-2 minor compression fracture T1-T12 (<20% loss in
height of anterior vertebral body)
BSFV-2 transverse or spinous process

BSM-6 Torso transection

* - Not in the 1976 AAAA-SAE-AMA AIS Dictionary and not reviewed
by the Joint Committee on Injury Scaling.

ABDOMEN

OIC Body Region: 3-Abdomen (abdominal and pelvic contents)

Valid Aspect Codes:

F Right (whole liver, or right lobe only)
L Left (spleen)
B Bilateral
C Central (umbilical area)
S Superior (left lobe of liver, diaphragm,
stomach)
I Inferior (bladder)
W Whole Region
U Unknown

OIC Body Region and Aspect:

EI Back Inferior (lumbar spine L1-L5)

System/Organ coding unique to Abdomen Region:

MI_G Bladder
MI_D Bowel (large and small)
MS_R Diaphragm
MS_K Kidney
MS_L Liver-left lobe
MS_R Liver-right lobe or whole
ML_Q Spleen
MS_D Stomach

OIC-AIS INJURY DESCRIPTION

Abdominal wall (soft tissue)
M_AI-1 abrasion
avulsion
M_VI-3 extensive
M_VI-2 superficial
M_CI-1 contusion
laceration or perforation, no organ involvement
M_LI-2 deep and/or extensive
M_LI-1 superficial
M_RM-3 rupture

Biliary tract
laceration, perforation
MILD-5 deep and/or extensive
MILD-4 superficial

'_' - Any code valid for region may be used.

'.' - Aspect codes I, R, or B may be used.

MIFD-5 rupture

 Bladder (urinary)
 MICG-3 contusion
 MIFG-3 rupture (+1 for intraperitoneal)

 Colon (large bowel)
 laceration, perforation
 deep and/or extensive
 MILD-5
 MIID-4 superficial
 MIFD-5 rupture

 MSPR-3 Diaphragm rupture

 Duodenum
 laceration, perforation
 deep and/or extensive
 MSID-5
 MSID-4 superficial
 MSID-5 rupture

 M_LA-5 Intra-abdominal major vessel laceration

 Jejunum/ileum (small bowel)
 laceration, perforation
 deep and/or extensive
 MIID-5
 MIID-4 superficial
 MIID-5 rupture

 Kidney (includes adrenal glands)
 avulsion
 M.VK-5
 M.CK-3 contusion, with or without hematuria
 laceration, perforation
 deep and/or extensive
 M.LK-5
 M.LK-4 superficial
 M.BK-5 rupture

 Liver (includes gall bladder)
 laceration, perforation
 deep and/or extensive
 MRLL-5*
 MRLL-4* superficial
 MRLL-5* rupture
 MRLL-4** fracture**

 Lumbar spine
 BICM-1 acute strain
 BICC-2* cord contusion*

'.' - Aspect codes L, R, or B may be used.

*Left lobe of liver only is coded under S (superior).
 Right lobe or whole liver is coded under R (right).

** Not in the 1976 AAAM-SAE-AMA AIS Dictionary and not reviewed
 by the Joint Committee on Injury Scaling.

M1FV-3 cord transection
 M1FV-3 fracture (lamina, body, pedicle, facet) with or
 without dislocation, with
 M1FV-3 cord transection
 M1FV-1 nerve root damage
 M1FV-2 minor compression fracture L1-L5 (<20% loss in
 height of anterior vertebral body)
 M1FV-2 transverse or spinous process

Mesentery

M1LD-4 laceration, perforation
 (+1 if vascular involvement)
 M1LD-4 deep and/or extensive with vascular involve-
 ment
 M1LD-3 superficial
 M1RD-4 rupture

M1VG-4 Ovary avulsion

Pancreas

M1SD-3 contusion
 M1SD-5 laceration, perforation
 deep and/or extensive with or without duodenum
 involvement
 M1SD-4 superficial
 M1RD-5 rupture

Penis

M1VG-4 avulsion
 M1CG-1 contusion
 M1LG-4 laceration, perforation, rupture
 deep and/or extensive
 M1LG-3 superficial

Perineum

M1AI-1 abrasion
 M1VI-3 avulsion
 M1CI-1 contusion
 M1LI-3 laceration, perforation
 deep and/or extensive
 M1LI-1 superficial

Peritoneum

M1LD-5 laceration, perforation
 deep and/or extensive
 M1LD-4 superficial
 M1RD-5 rupture
 M1HD-3* hemoperitoneum* (code specific system/organ rather
 than 'D' when known)

* - Not in the 1976 AAAM-SAE-AMA AIS Dictionary and not reviewed
 by the Joint Committee on Injury Scaling.

Rectum
 laceration, perforation
 MILD-5 deep and/or extensive
 MILD-4 superficial over entire rectal wall or extra-
 peritoneal
 MIBD-5 rupture

MAHA-3 Retroperitoneum injury involving hemorrhage

Scrotum
 MIVG-3 avulsion
 MICG-1 contusion
 laceration
 MILG-2 deep and/or extensive
 MILG-1 superficial

MIRQ-4 Spleen rupture

Stomach
 laceration, perforation
 MSID-4 deep and/or extensive
 MSID-3 superficial
 MSID-4 rupture
 MIVG-4 Testes avulsion
 M_MW-6 Torso transection
 MIVG-3 Ureter avulsion

Urethra
 MIVG-4 avulsion
 MICG-3 contusion
 laceration
 MILG-4 deep and/or extensive
 MILG-3 superficial

MIVG-4 Uterus avulsion
 MIOG-4* spontaneous abortion*

Vagina
 MIAG-1 abrasion
 MICG-2 contusion
 laceration, perforation
 MILG-3 deep and/or extensive
 MILG-1 superficial

Vulva
 MIAG-1 abrasion
 MICG-1 contusion
 laceration, perforation
 MILG-3 deep and/or extensive
 MILG-1 superficial

* - Not in the 1976 AAAM-SAE-AMA AIS Dictionary and not reviewed
 by the Joint Committee on Injury Scaling.

PELVIS

Bony Region: P-Pelvis (bony structure)

Valid Aspect Codes:

R,L Right, Left (pelvic joint)
A Anterior (superior and inferior pubic ram)l
P Posterior (skin, posterior muscles, sacrum,
coccyx)
W Whole Region
U Unknown

OIC-AIS INJURY DESCRIPTION

P_PS-2 Bony pelvic fracture, with or without dislocation of:
P_PS-2 acetabulum (+1 AIS for open and/or displaced)
PPFS-2 coccyx (+1 AIS for open and/or displaced)
P_PS-2 ilium (+1 AIS for open and/or displaced)
P_PS-2 ischium (+1 AIS for open and/or displaced)
PAFS-2 pubic ramus (+1 AIS for multiple)
(+1 AIS for open and/or displaced)
PPFS-2 sacrum (+1 AIS for open and/or displaced)

P.DJ-3 Hip dislocation with or without fracture of femoral
head or acetabulum

Sacro-iliac
PPFS-3 fracture
PPDJ-3 dislocation

PAOS-3 Symphysis pubis separation

'_' - Any aspect code valid for region may be used.

'.' - Aspect codes I, R, or B may be used.

EXTREMITIES

CIC Body Regions:

S Shoulder, (Clavicle, scapula)
 X Upper Extremities (whole arm)
 A Arm (upper)
 E Elbow
 R Forearm
 W Wrist-Hand-Digits
 Y Lower Extremities (whole leg)
 T Thigh (femur)
 K Knee
 L Leg (below knee)
 Q Ankle-Foot-Digits
 U Unknown

Valid Aspect Codes:

R,L Right, Left
 B Bilateral (use instead of W, Whole Region)
 Note: A, P, S, and I are invalid aspects in Extremities

CIC-AIS

INJURY DESCRIPTION

S.DJ-2 Acromioclavicular joint dislocation
 S.LJ-2 laceration through synovia (into joint)

Q Ankle [see Tarsus]

Arm-Forearm-Hand

#.AI-1 abrasion
 #.AW-4 amputation (above or below elbow)
 #.CI-1 contusion
 #.NW-4 crush
 fracture [see specific bone]
 #.PS-4 multiple long bone in same extremity
 laceration
 #.II-2 deep and/or extensive
 #.IN-3 major nerve involvement
 #.IA-3 major vessel involvement
 #.II-1 superficial

A.BM-2 Biceps rupture

Carpus (wrist)

W.CI-1 contusion with or without swelling
 W.DJ-3 dislocation
 W.FJ-2 fracture (+1 AIS for open, displaced and/or

'.' - Aspect codes L, R, or B may be used.

'#' - A, R, W, or X (no X for amputation)

a.LJ-3 comminuted)
 laceration through synovia (into joint)
 a.SJ-2 sprain

S.PS-2 Clavicle fracture (+1 AIS for open, displaced and/or
 comminuted)

Digit (finger or toe)

a.MS-2 amputation
 a.KS-2 crush
 a.DJ-1 dislocation
 a.FJ-1 fracture, with or without dislocation
 a.SJ-1 sprain

Elbow

E.CI-1 contusion with or without swelling
 E.DJ-3 dislocation
 E.FJ-2 fracture (+1 AIS for open, displaced and/or
 comminuted)
 E.LJ-3 laceration through synovia (into joint)
 E.SJ-2 sprain

Femoral fracture (+1 AIS for open, displaced and/or
 comminuted)

T.PS-2 condylar
 T.PS-2 head
 T.PS-2 neck
 T.PS-2 shaft (+1 AIS for sciatic nerve involvement)
 T.PS-2 supracondylar

Fibula fracture (+1 AIS for open, displaced and/or
 comminuted)

L.PS-2 head
 L.PS-2 malleolus
 L.PS-2 shaft

W Finger [see Digit]

Q Foot [see Thigh-Leg-Foot; Metatarsus]

R Forearm [see Arm-Forearm-Hand]

 Hand [see Arm-Forearm-Hand]

A.PS-2 Humerus fracture (+1 for radial nerve damage)
 (+1 AIS for open, displaced and/or comminuted)

Knee

K.CJ-1 contusion, with or without swelling
 K.LJ-3 laceration through synovia (into joint)
 K.SJ-2 sprain

'a' - Use W (finger) or Q (toe)

- Leg [see Thigh-Leg-Foot]
- _.SJ-3 Ligament tears (major joint, i.e., hip, knee, ankle, subtalar, mid-tarsal)
- Q.FS-2 Malleolus fracture [see also Tibia and Fibular]
(+1 AIS for open, displaced and/or comminuted)
- Metacarpus (hand)
- W.DJ-2 dislocation
- W.FS-2 fracture (+1 AIS for open, displaced and/or comminuted)
- W.IJ-2 laceration through synovia (into joint)
- W.SJ-1 sprain
- Metatarsus (foot)
- Q.DJ-2 dislocation
- Q.FS-2 fracture (+1 AIS for open, displaced and/or comminuted)
- Q.IJ-2 laceration through synovia (into joint)
- Q.SJ-2 sprain
- Patella
- K.DJ-3 dislocation
- K.FJ-2 fracture (+1 AIS for open, displaced and/or comminuted)
- R.PS-2 Radius fracture (+1 AIS for open, displaced and/or comminuted)
- S.PS-2 Scapula fracture
- Shoulder (glenohumeral joint)
- S.CI-1 contusion, with or without swelling
- S.DJ-3 dislocation
- S.IJ-3 laceration through synovia (into joint)
- S.SJ-2 sprain
- Tarsus (ankle)
- Q.CI-1 contusion, with or without swelling
- Q.DJ-3 dislocation
- Q.FJ-2 fracture (+1 AIS for open, displaced and/or comminuted)
- Q.IJ-3 laceration through synovia (into joint)
- Q.SJ-2 sprain
- _.RM-3 Tendon rupture
- Thigh-Leg-Foot
- #.AI-1 abrasion

'_' - All extremities

'#' - T, L, Q, or Y (no Y for amputation)

* * 4-4 amputation (above or below knee)
 * 1-1 contusion
 * 2-4 crush
 fracture [see specific bone]
 * 1-2 multiple long bone in same extremity
 (+1 AIS for open, displaced and/or
 comminuted)
 laceration
 * 1-2 deep and/or extensive
 * 1-3, * 1A-3 major nerves and/or vessels involvement
 * 1-1 superficial

 Tibia fracture (+1 AIS for open, displaced and/or
 comminuted)
 L.FS-2 malleolus
 L.FS-2 plateau
 L.FS-2 shaft

 Q Toe [see Digit]

 H.FS-2 Ulna fracture (+1 AIS for open, displaced and/or
 comminuted)

 W Wrist [see Carpus]